Senses 6100 series panel PC user manual

Industrial Panel PCs

Senses 6100 series

Senses 6172 / 6170 / 6152 / 6150LP

User manual
(Issue A)

Part No: 85090083

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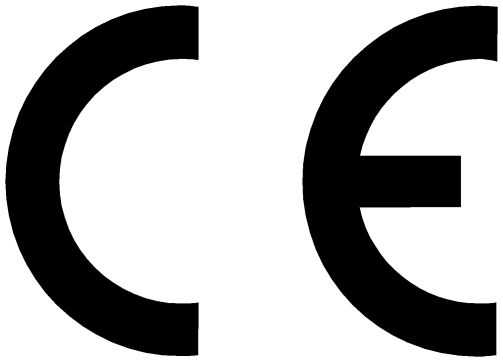
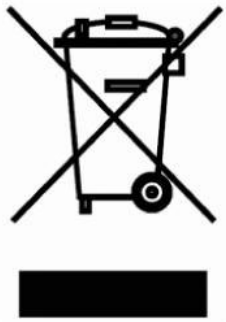
Disclaimer

This instruction manual is supplied to provide the user with sufficient information to utilise the purchased product in a proper and efficient manner. The information contained has been reviewed and is believed to be accurate and reliable. However, Amplicon Liveline Ltd accepts no responsibility for any problems caused by errors and omissions. Specifications and instructions are subject to change without notice.

The Senses 6100 series industrial panel PCs are RoHS compliant.





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Safety Precautions

- Before you unpack your Panel PC system, ensure you carefully read through this manual and follow any related safety or operational instructions.
- Only suitably qualified and experienced personnel should work inside the computer.
- Before commencing work within the PC ensure that the mains is disconnected from the PC and any attached peripherals.

Operation of your panel PC

Before operating your panel PC please:

- Read the equipment ratings plate and ensure that the mains circuit is suitably rated to power the equipment, to avoid risk of overloading. Do not use mains adaptors, or extenders.
- Ensure that any cables connecting to the equipment are made safe and do not present a tripping hazard.
- To avoid risk of electric shock ensure that equipment is plugged into a suitably earthed mains outlet. Only use the power cord supplied with your panel PC or power supply unit. Do not continue to use the cable if it is cut or damaged

---

- Ensure the Panel PC chassis is kept away from heat sources, such as radiators and heating vents.
- Panel PC chassis ventilation slots must be kept clear and not blocked. Failure to do so is likely to cause the unit to overheat and become unstable.
- Avoid connecting the Panel PC to an electrical supply which may have unacceptable interruptions, surges, spikes or noise. We recommend the use of an uninterruptible power supply (UPS), surge protector or mains conditioner to address the problem.

- Turn OFF the system power before cleaning. Clean the system using a cloth only. Do not spray any liquid cleaner directly onto the screen. Although the touchscreen is chemical resistant, it is recommended that you spray the liquid cleaner on a cloth first before wiping the screen.
- Avoid using sharp objects to operate the touchscreen. Scratches on the touchscreen may cause malfunction or internal failure to the touchscreen.
- The flat panel display is susceptible to shock or vibration. When assembling the Senses 61xx, make sure it is securely installed.

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Electrostatic Discharge Damage

- When working on the inside of a panel PC system, you must be aware that many of the components are electrostatic discharge sensitive (ESD). These components can easily be damaged if suitable precautions are not taken. ESD damage is not always immediately apparent and may result in a failure many weeks later. When working on equipment we recommend the use of an ESD mat and wrist strap.

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Chapter 1

Introduction

This chapter contains general information and detailed specifications of the Senses 6100 series.

Senses 6172 – 17” LCD touchscreen and 2 x PCI expansion slots
Senses 6170 – 17” LCD touchscreen and slim chassis design
Senses 6152 – 15” LCD touchscreen and 2 x PCI expansion slots
Senses 6150LP – 15” LCD touchscreen, slim chassis design and low power consumption

Chapter 1 includes the following sections:

- **General Description**
- **System Specification**
- **Dimensions**
- **Front View & I/O Outlets**
- **Package List**

1.1 General Description

The Senses 6100 series comprises a TFT Touch Panel PC, equipped with Intel Core 2 Duo processors (or Mobile processors for low power applications) and 17” SXGA or 15” XGA touchscreen LCD. These industrial panel PCs are complete full-function and cost-effective industrial HMI controllers.

Powerful computing via Intel Core 2 Duo processors
The Senses 6172 / 6170 / 6152 panel PCs feature Intel Core 2 Duo processors and Intel Q965 + ICH8 chipset to provide powerful computing performance. The Senses 6150LP panel PC features an Intel Core Duo Mobile processor and Intel 945GM + ICH7M chipset to provide powerful computing performance and low power (LP) consumption.

With dual 1394a ports, dual Gigabit Ethernet ports and up to 4GB of dual-channel DDR2 system memory, these panel PCs can deliver high computing capability for high performance and demanding applications.

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Expandable for 2 PCI slots
The Senses 6172 / 6152 have 2 x PCI slots for expansion purposes. These slots are commonly used for standard half-size PCI cards.

Slim designed panel PCs
The Senses 6170 / 6150LP have a slim chassis design making them ideal for wall mount or VESA mount applications.

Speaker & WLAN antenna supported
The Senses 6172 / 6152 feature built-in speakers. All models feature optional WLAN module and antenna for wireless network connectivity.

These industrial-grade panel PCs are suited to industrial or commercial market applications, such as transportation, factory automation, HMI machine controller, Point Of Sale, KIOSK and more. They provide highly reliable and flexible industrial-grade all-in-one solutions.

1.2 System Specifications

1.2.1 Main CPU Board

- **CPU**
  - Socket LGA775 for Intel Core 2 Duo / Core Solo / Pentium 4 Processors with FSB 533/800/1066 MHz (for Senses 6172 / 6170 / 6152)
  - Socket M (478-pin) for Intel Core 2 Duo M / Core Duo M / Core Solo M / Celeron M Processors with 533/667MHz (for Senses 6150LP)
- **System Chipset**
  - Intel Q965 + ICH8 (for Senses 6172 / 6170 / 6152)
  - Intel 945GM + ICH7M (for Senses 6150LP)
- **BIOS**
  - Phoenix-Award BIOS, 4Mbit with RPL/PXE LAN Boot ROM, SmartView and Customer CMOS Backup
- **System Memory**
  - 2 x 240-pin DDR2 DIMM maximum up to 4GB (note that physical available memory may be limited by operating system)
- **L2 Cache**
  - Integrated in CPU
- **Bus Clock**
  - 533/800/1066 MHz (for Senses 6172 / 6170 / 6152)
  - 533/667MHz (for Senses 6150LP)

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- **Watchdog Timer**
  - Up to 255 levels as Reset feature

1.2.2 I/O System

- **Standard I/O**
  - 3 x serial ports with power
    (2 x RS-232 (COM2, COM3), 1 x RS-232/422/485 (COM1))
  - 1 x PS/2 for Keyboard + Mouse interface
    (for Senses 6172 / 6170 / 6152)
  - 2 x PS/2 for Keyboard + Mouse interface
    (for Senses 6150LP)
  - 4 x USB 2.0 ports
  - 2 x IEEE1394a Ports
  - 1 x DVI-I Output (for Senses 6172 / 6170 / 6152)
  - 1 x VGA (for Senses 6150LP)
- **Ethernet**
  - First port with i82566DM Gigabit Ethernet PHY,
    Second port with RTL8111B for Gigabit/Fast Ethernet
    (for Senses 6172 / 6170 / 6152)
  - Dual RL 8111B for PCI-E Gigabit Ethernet
    (for Senses 6150LP)
- **Audio**
  - HD Audio for two channel output
    (for Senses 6172 / 6170 / 6152)
  - Realtek AC'97 codec audio (for Senses 6150LP)
  - MIC-In, Line-Out
- **Storage**
  - 4 x SATA-300 interface (for Senses 6172 / 6170 / 6152)
  - 1 x PATA-100 IDE, 2 x SATA-150 (for Senses 6150LP)
  - All Senses 6100 panel PCs come with a 3.5" 250GB SATA HDD as standard
- **Expansion Slot**
  - 2 x 32-bit PCI Master slots (for Senses 6172 / 6152)
- **Optical drive**
  - 1 x built-in slim CDROM drive (for Senses 6172 / 6152)

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1.2.3 System Specification

- **Display**
  - 17.0” SXGA TFT LCD with resistive touchscreen (for Senses 6172 / 6170)
  - 15.0” XGA TFT LCD with resistive touchscreen (for Senses 6152 / 6150LP)
- **Disk Drive Housing**
  - 1 x internal 3.5” SATA hard drive (as standard) (2 x 2.5” hard drive or solid state drive on request)
- **AC Power Supply (100V ~ 240V)**
- **Power rating**
  - 250W (for Senses 6172 / 6170 / 6152)
  - 180W (for Senses 6150LP)
- **Heat Dispensing Design**
- **Gross Weight**
  - Approx 15kg (for Senses 6172 / 6152)
  - Approx 10kg (for Senses 6170 / 6150LP)
- **Dimensions**
  - Panel: 450(W) x 370(H) x 12(D) mm (for Senses 6172)
  - Case: 415(W) x 339(H) x 138(D) mm (for Senses 6172)
  - Panel: 450(W) x 370(H) x 12(D) mm (for Senses 6170)
  - Case: 415(W) x 339(H) x 75(D) mm (for Senses 6170)
  - Panel: 420(W) x 335(H) x 12(D) mm (for Senses 6152)
  - Case: 380(W) x 310(H) x 138(D) mm (for Senses 6152)
  - Panel: 420(W) x 335(H) x 12(D) mm (for Senses 6150LP)
  - Case: 380(W) x 310(H) x 75(D) mm (for Senses 6150LP)
- **Operating Temperature**
  - 5 to 40℃ @ 50% relative humidity
- **Relative Humidity**
  - 10% to 85% @ 40℃, Non-Condensing
- **Altitude**
  - 10,000 ft. (3,000 meters)
- **Vibration (Operating)**
  - 5 to 500 Hz, 1 G random

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- **Shock (Operating)**
  - 10 G peak acceleration (11 msec. duration)

NOTE *All specifications and images are subject to change without notice.*

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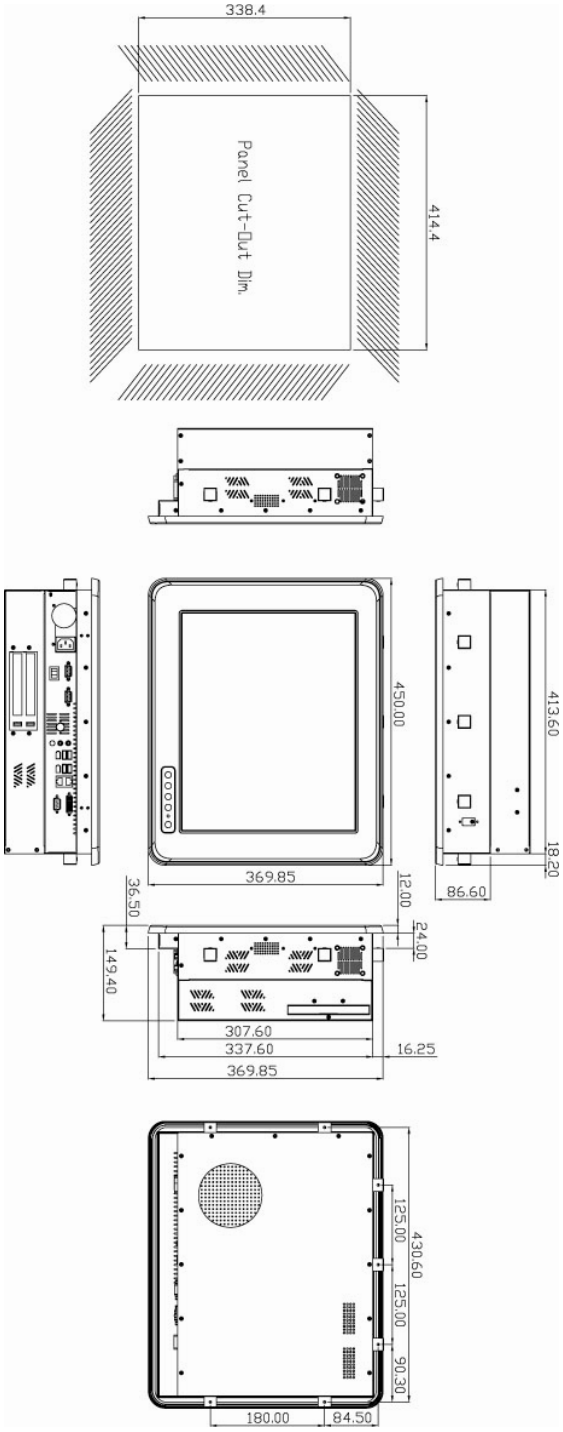
1.3 Dimensions

The following diagrams show the dimensions and outlines of Senses 6100 series panel PCs.

- **Senses 6172 dimensions**



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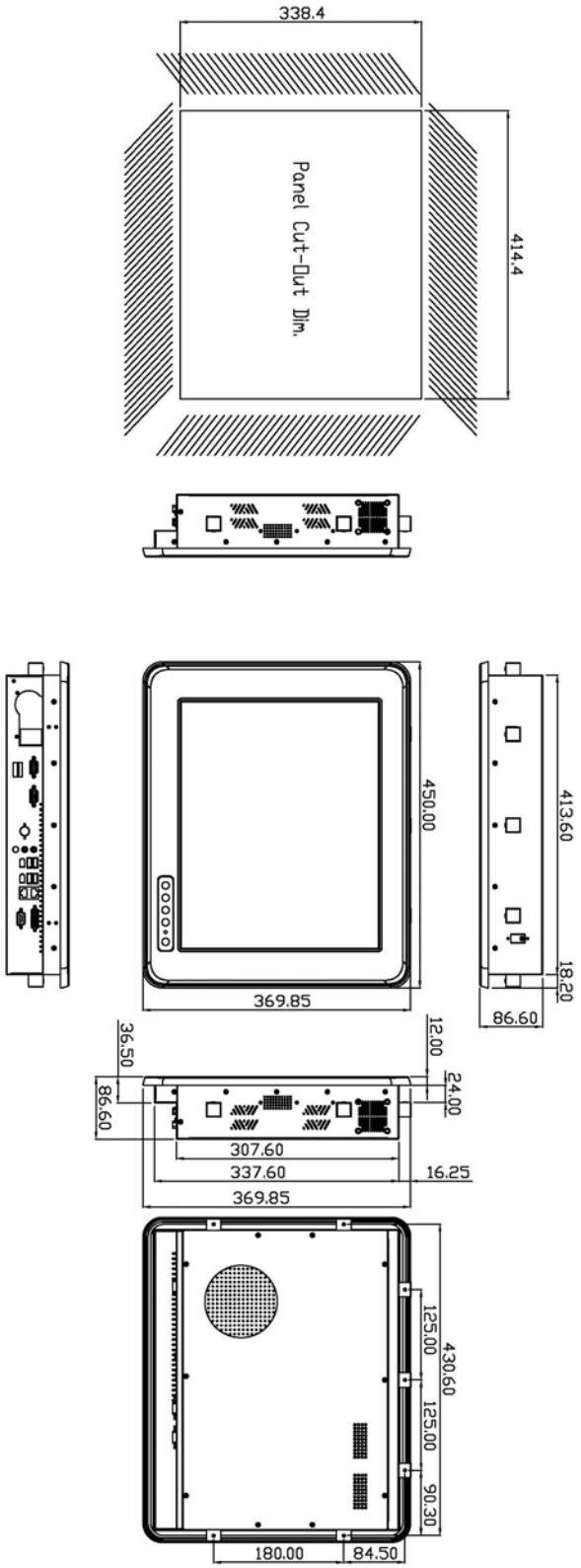
- **Senses 6170 dimensions**



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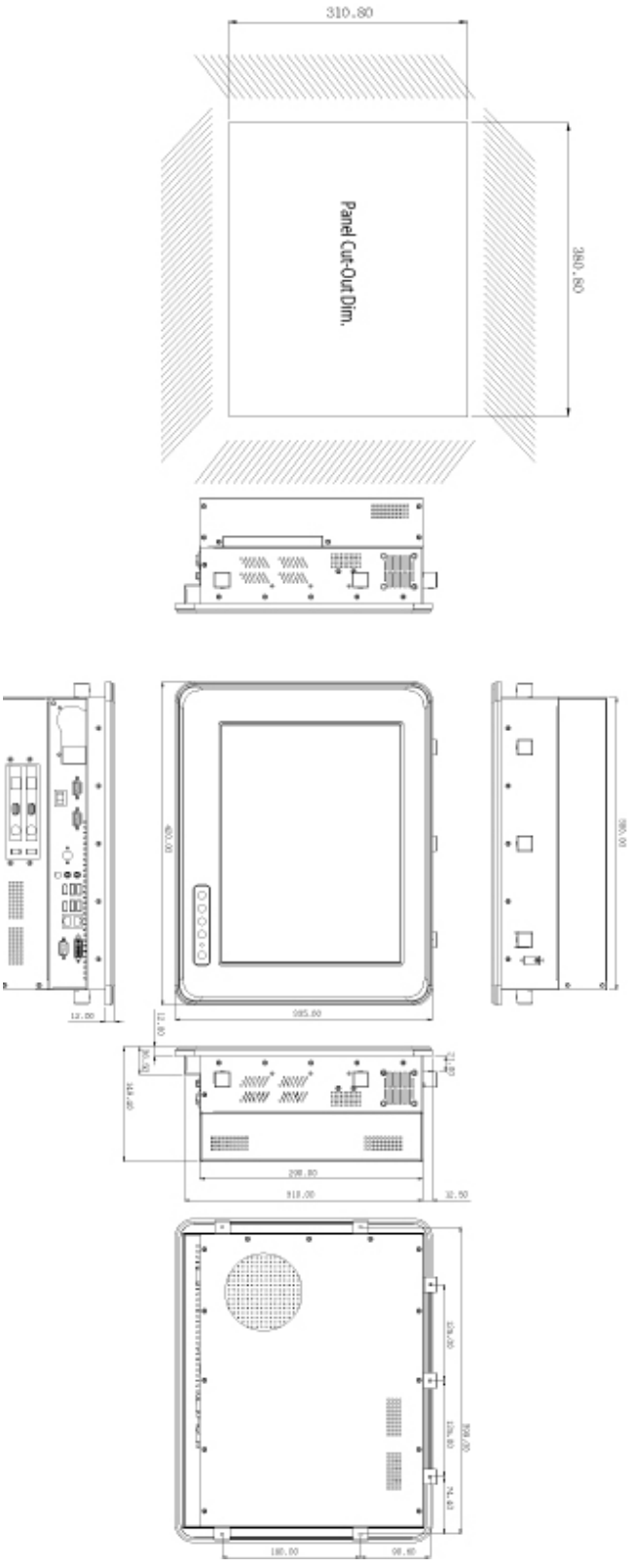
- **Senses 6152 dimensions**



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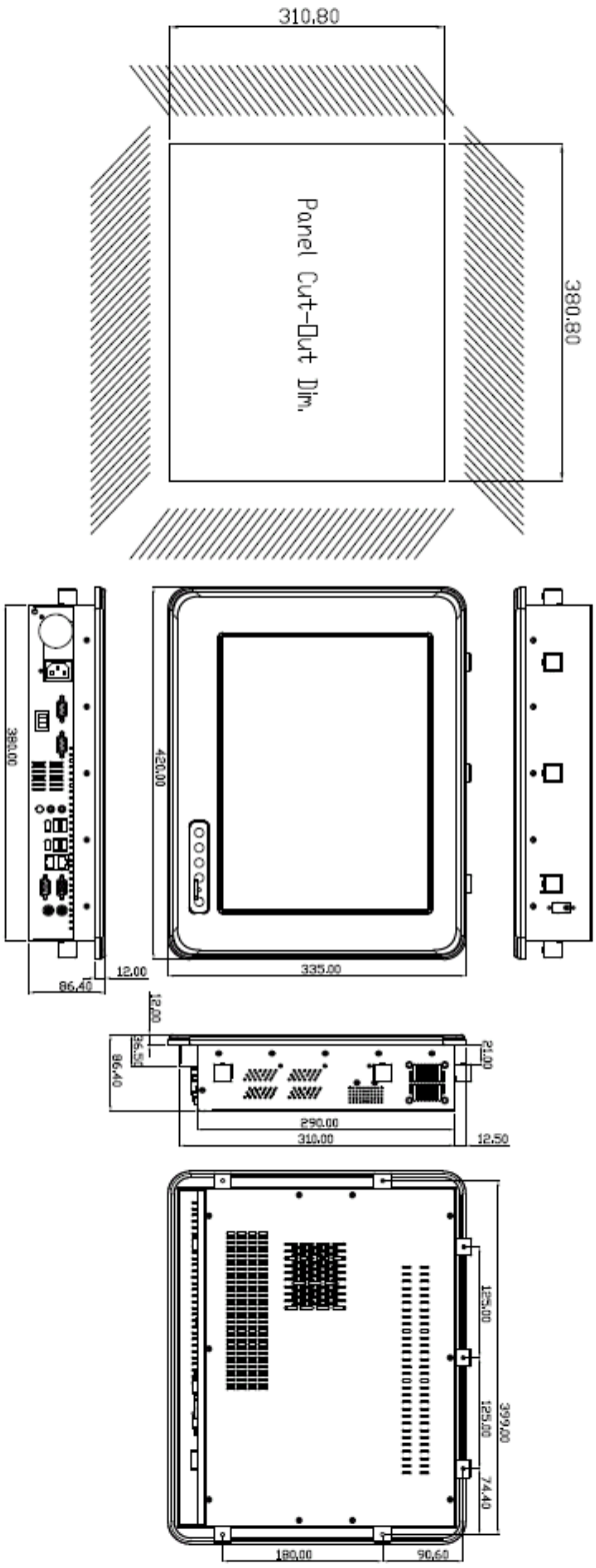
- **Senses 6150LP dimensions**



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1.4 Front view and I/O outlets

1.4.1 Front view

Please refer to the following illustration for features and controls of the Senses 6100 series panel PC front bezels.

No	Function
1	SEL+
2	SEL-
3	Backlight ON/OFF

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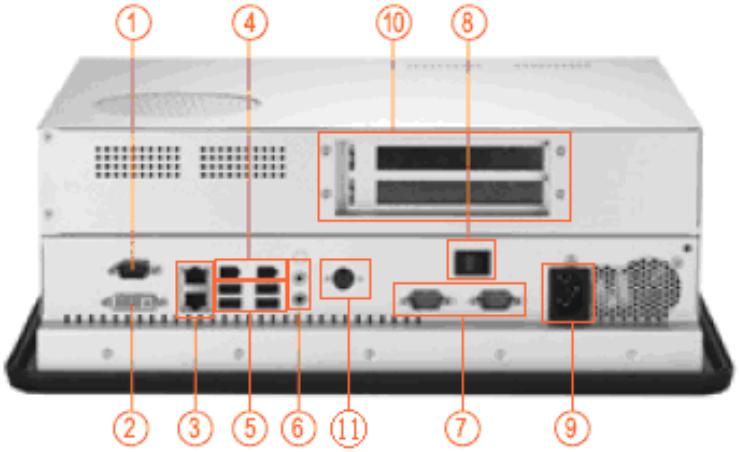
1.4.2 I/O outlets

The following figures show the I/O locations of the Senses 6100 series panel PCs.

- **Senses 6172 I/O outlets**



No	Connector	No	Connector
1	COM1 (RS-232/422/485)	**7**	COM 2 & COM 3 (RS-232)
2	DVI-I	**8**	Power Switch
3	Giga LAN x 2	**9**	AC power
4	IEEE 1394a x 2	**10**	PCI slots x 2
5	USB v2.0 x 4	**11**	PS/2 Keyboard/Mouse
6	Mic-in, Line-Out		

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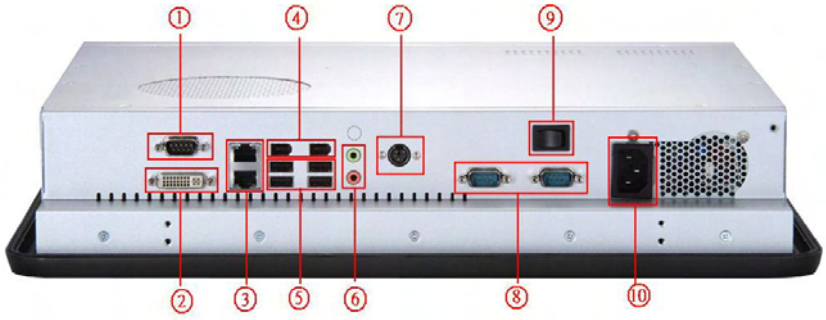
- **Senses 6170 I/O outlets**



No	Connector	No	Connector
1	COM1 (RS-232/422/485)	**6**	Mic-in, Line-Out
2	DVI-I	**7**	PS/2 Keyboard/Mouse
3	Giga LAN x 2	**8**	COM 2 & COM 3 (RS-232)
4	IEEE 1394a x 2	**9**	Power Switch
5	USB v2.0 x 4	**10**	AC power

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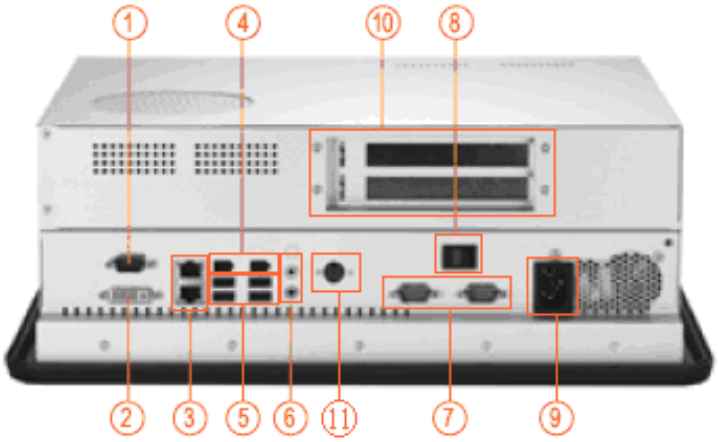
- **Senses 6152 I/O outlets**



No	Connector	No	Connector
1	COM1 (RS-232/422/485)	**7**	COM 2 & COM 3 (RS-232)
2	DVI-I	**8**	Power Switch
3	Giga LAN x 2	**9**	AC power
4	IEEE 1394a x 2	**10**	PCI slots x 2
5	USB v2.0 x 4	**11**	PS/2 Keyboard/Mouse
6	Mic-in, Line-Out		

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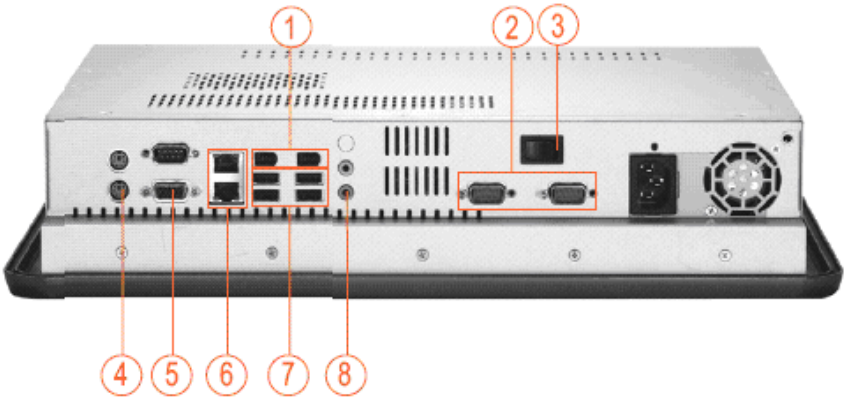
- **Senses 6150LP I/O outlets**



No	Connector	No	Connector
1	IEEE 1394a x 2	**5**	VGA
2	COM 2 & COM 3 (RS-232)	**6**	Giga LAN x 2
3	Power switch	**7**	USB v2.0 x 4
4	PS/2 Keyboard/Mouse	**8**	Mic-in, Line-Out

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1.5 Content List

When you receive the Senses 6100 series panel PC, please find the following items in the package.

- Senses 61xx panel PC
- AC power cord x 1
- Amplicon product CD x1
- DVI TO VGA Adaptor x 1 (for Senses 6172 / 6170 / 6152)
- PS/2 Splitter – Y Cable x 1 (for Senses 6172 / 6170 / 6152)
- Panel mount kit x 7
- Rack Mount Bracket Kit x 1 (Optional)
- Wall / VESA mount bracket x 1 (Optional) (for Senses 6170 / 6150LP)
- Desktop Kit x 1 (Optional) (for Senses 6170 / 6150LP)

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Chapter 2

Hardware installation

The Senses 6100 series provides flexibility for storage drive selection allowing different configurations such as hard disk drives (HDD), solid state drives, WLAN cards and PCI cards. This chapter shows how to install different hardware options. These include:

- CPU
- DRAM
- Hard Disk
- CD-ROM
- Add-On Card
- Serial Port
- VGA
- Ethernet
- Mounting

2.1 CPU and DRAM Installation

The standard Senses 6100 series panel PC is designed for Intel Core 2 Duo processors (Intel Core 2 Duo Mobile for the Senses 6150LP). The built-in CPU board provides two 240-pin DDR2 DIMM sockets that support system memory up to 4GB (note that physical available memory may be limited by operating system).

Please refer to the instructions below, illustrated with concise images, to upgrade the CPU and DRAM step by step:

- **Step 1** Make sure the panel PC is turned off.
- **Step 2** Make sure the AC power-cord is unplugged.

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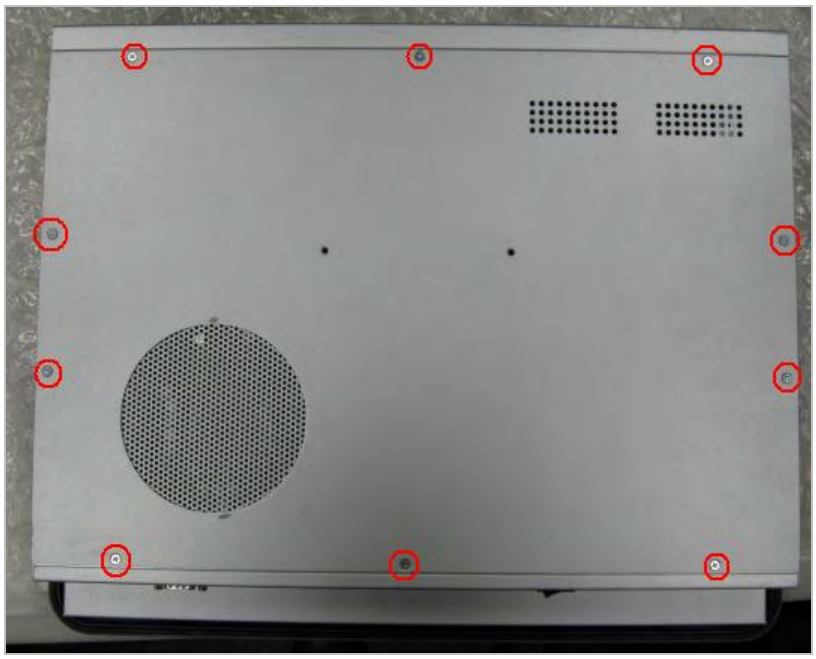
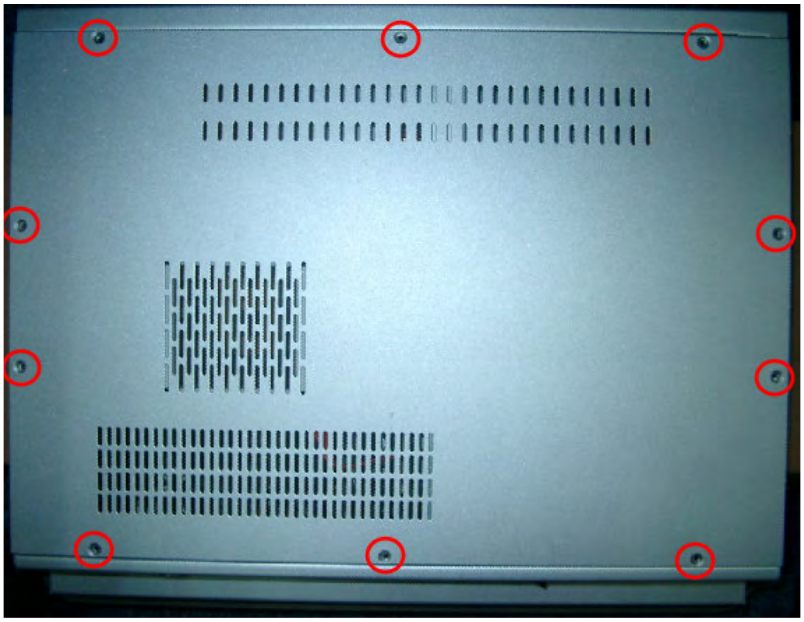
- **Step 3** Locate screws on the rear chassis as illustrated, and unscrew to open it.



(for Senses 6170)



(for Senses 6150LP)

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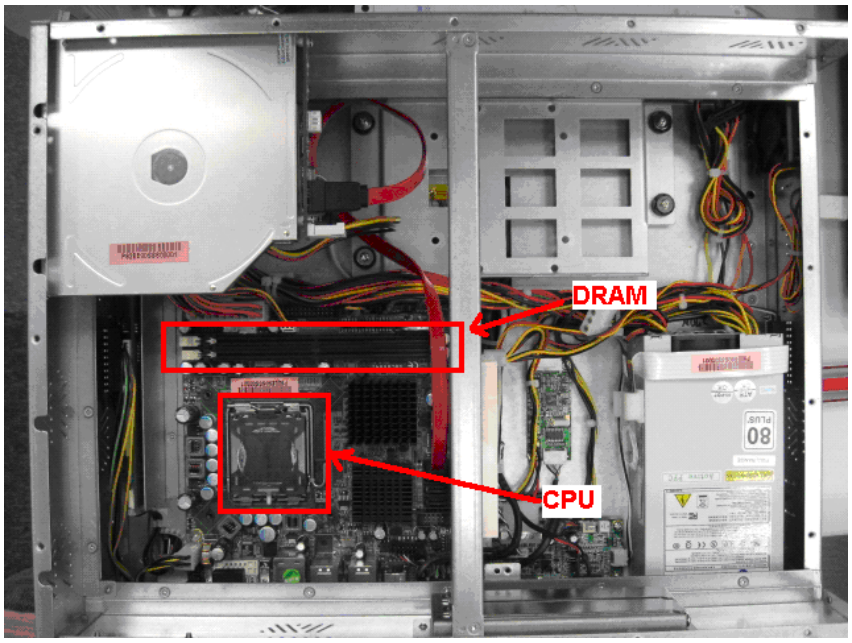
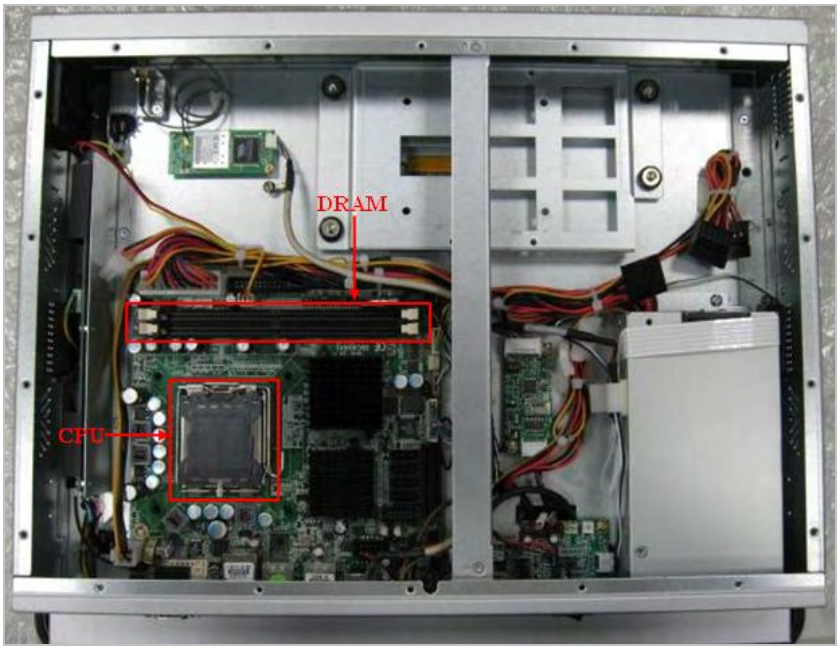
- **Step 3** Remove the riser card fixing kit. The CPU and DRAM can now be installed accordingly.



(for Senses 6172)



(for Senses 6170)

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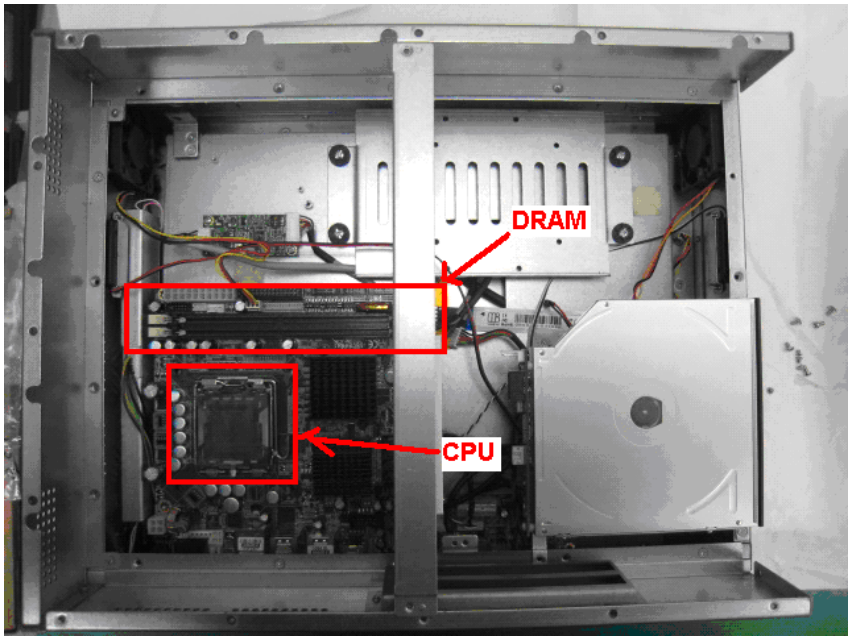
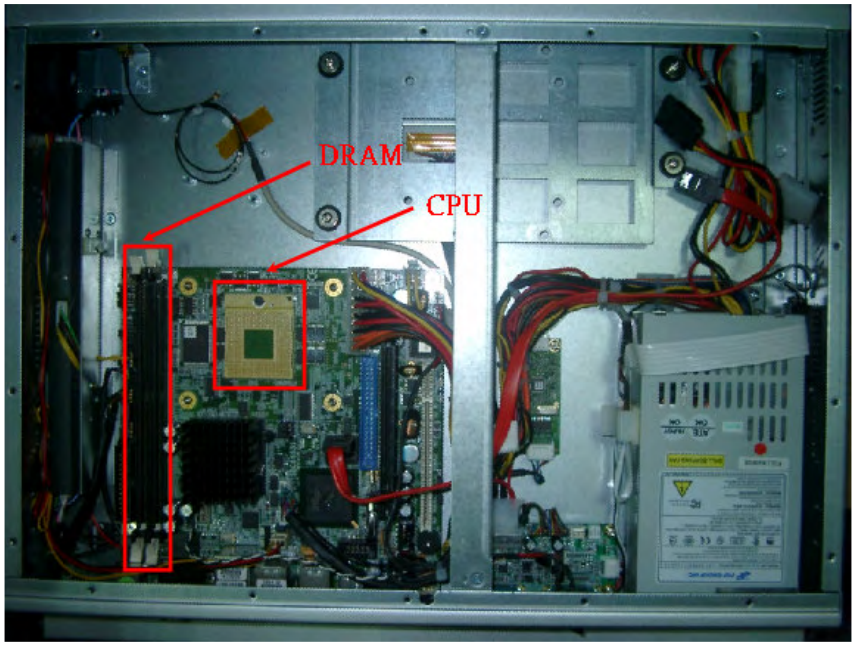


(for Senses 6152)



(for Senses 6150LP)

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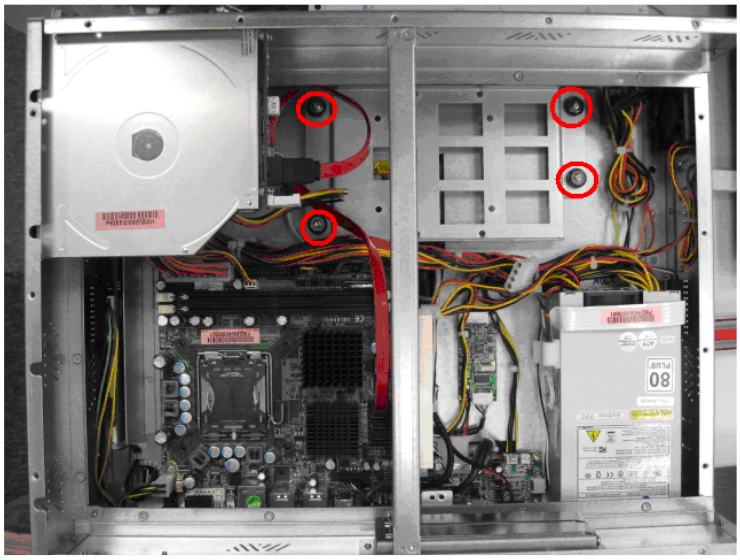
2.2 HDD installation

The Senses 6100 series offer convenient drive bay modules for users to install 1 x 3.5” HDDs or 2 x 2.5” HDDs or solid state drives.

Please refer to the instructions below, illustrated with concise images, to install the hard drive or solid state drive step by step:

- **Step 1** Make sure the panel PC is turned off.
- **Step 2** Make sure the AC power-cord is unplugged
- **Step 3** After removing the rear plate of the panel PC by removing fastening screws, remove the riser kit (for the Senses 6172 / 6152) and unscrew 4 screws to take out HDD bracket kit from system in order to install the 3.5” or 2.5” HDD. (HDD bracket is pre-installed in the panel PC).



(for Senses 6172)

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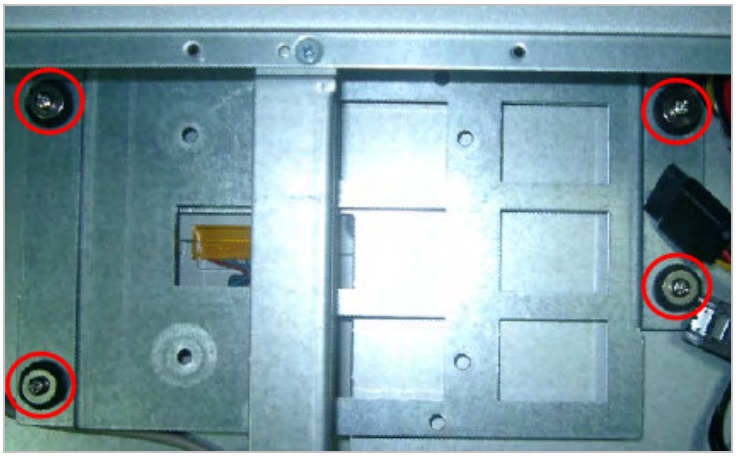
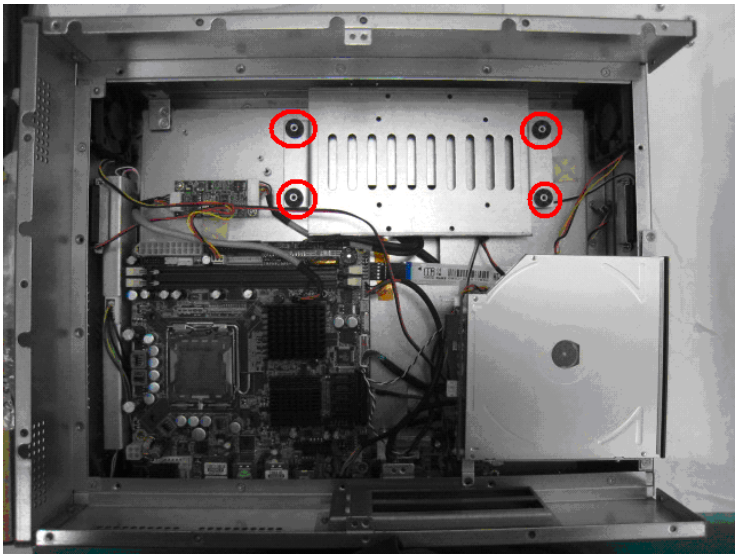
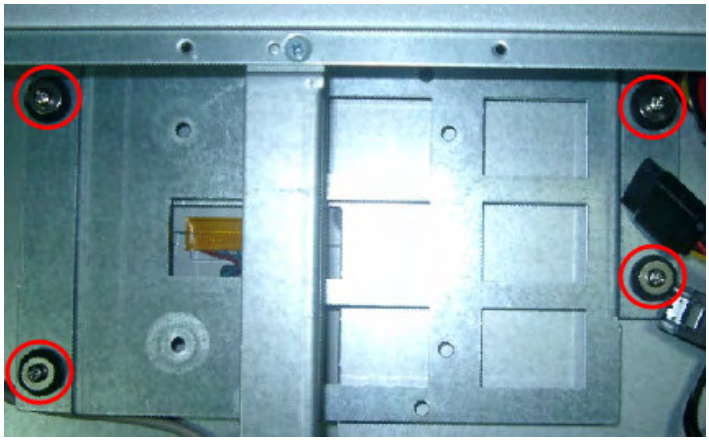


(for Senses 6170)



(for Senses 6152)



(for Senses 6150LP)

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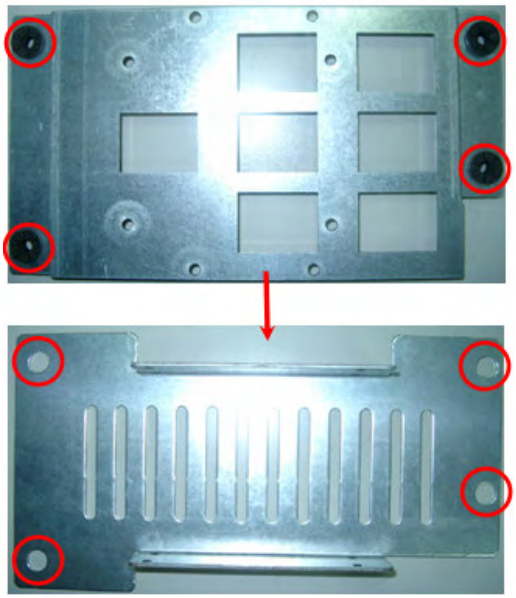
- **Step 4** Single 3.5” HDD installation is now complete.

- **Step 5** If 2.5” HHD is being fitted, then change to 2.5” HDD bracket as shown below.



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- **Step 6** Single or dual 2.5” HDD installation is now complete.

- **Step 7** For dual 3.5” HDD installation (for Senses 6172 / 6152), change HDD bracket as shown below. Then Fix the HDD to the HDD bracket to complete the installation.

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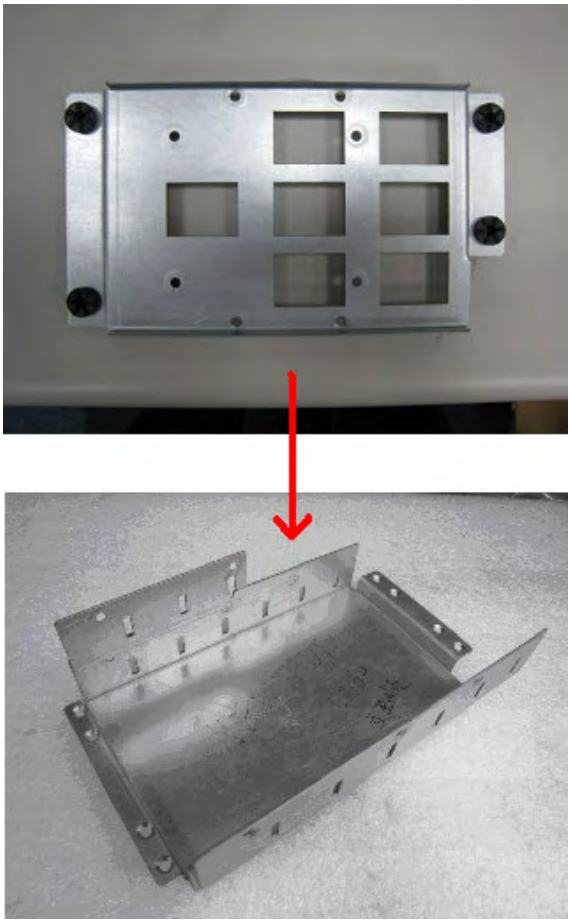

- **Step 8** When installing Dual 3.5” HDD, users must install a suitable fan to decrease system heat. Installation step as illustrated below.

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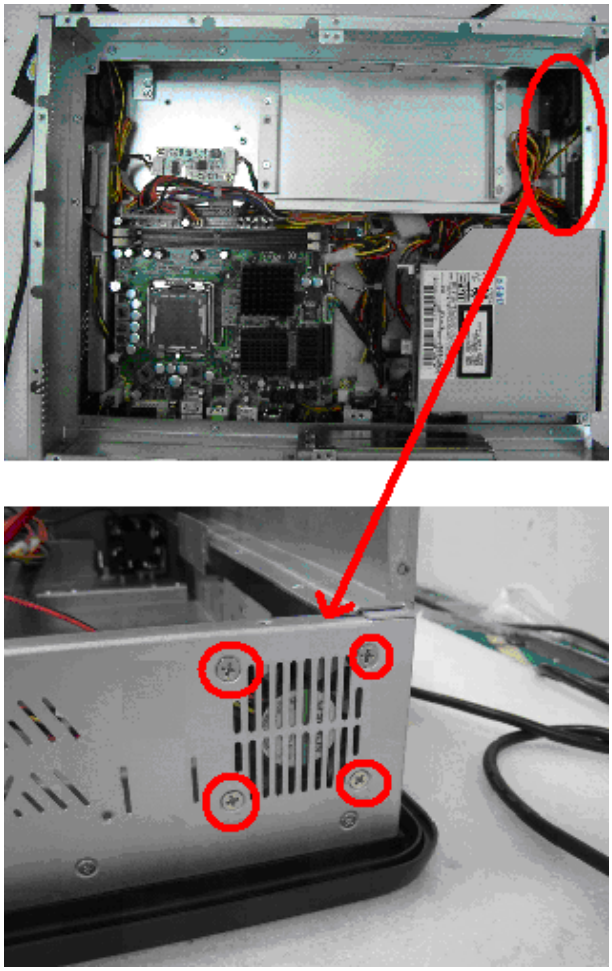
Screw the fan to the right side of cover.



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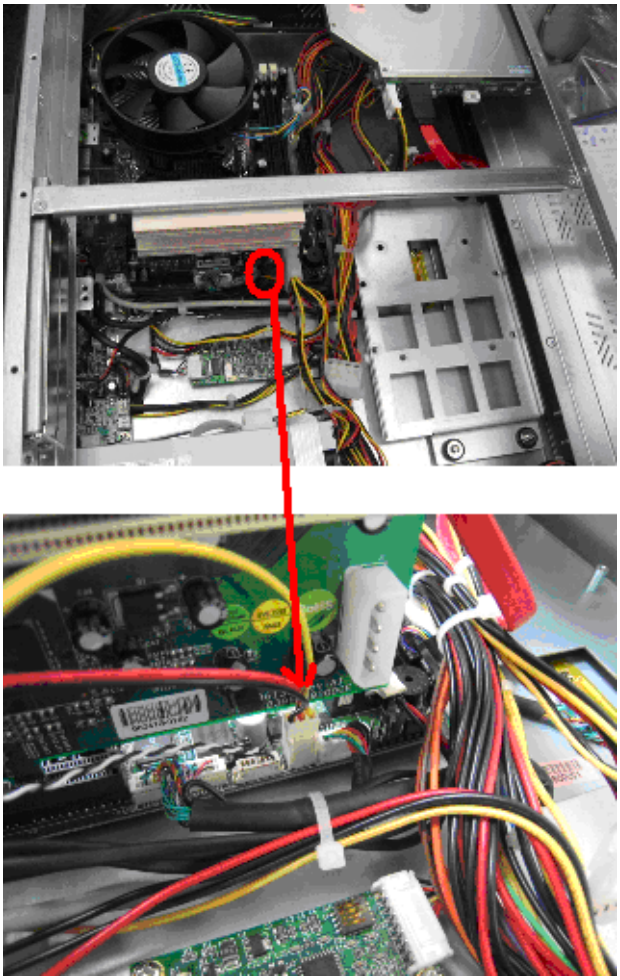
Connect power cable of fan to 3 pin fan connector (CN3) on the motherboard as shown.



- **Step 9** Close rear of the chassis and fasten screws

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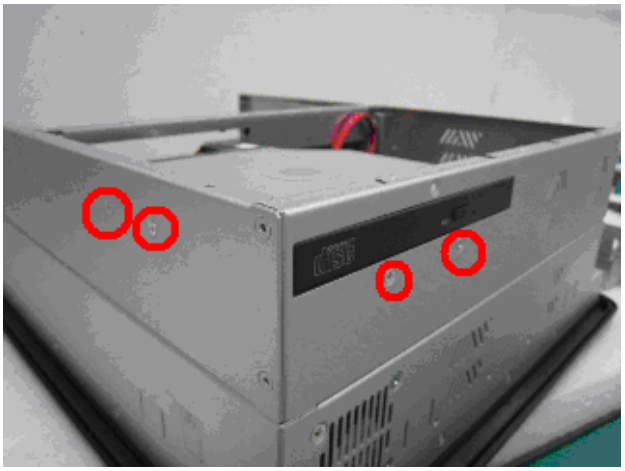
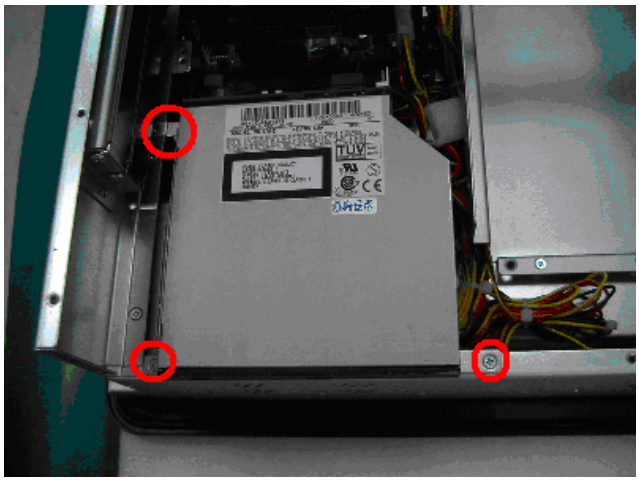
2.3 CD-ROM Installation

The Senses 6172 / 6152 offer convenient drive bay modules for users to install CD-ROM drives. When installing the CD-ROM, refer to the following instructions and illustrations:

- **Step 1** Unscrew screws to remove the rear chassis.
- **Step 2** Remove the riser card fix kit.
- **Step 3** Unscrew 4 screws which are around the chassis.



(For Senses 6172)



(For Senses 6152)

- **Step 4** The CD-ROM can now be taken out.

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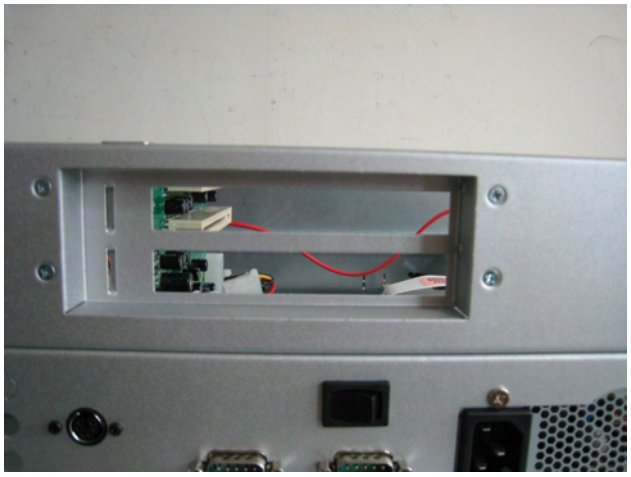
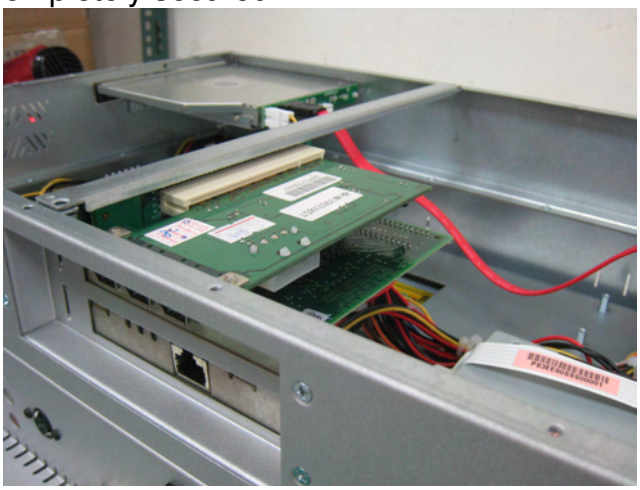
2.4 Add-on card installation

The Senses 6172 / 6152 provide riser cards for PCI slot expansion. The riser card assembly can accommodate two half-size expansion cards. To install the riser card, refer to the following instructions and illustrations below:

- **Step 1** Unscrew relevant screws to remove the rear of the chassis.
- **Step 2** Remove the riser card fixing kit.
- **Step 3** Remove plates.



- **Step 4** Insert the add-on card in the socket firmly until it is completely secured.



(For Senses 6172)

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(For Senses 6152)

Step 5 Replace the rear of the chassis. Installation is now complete.

2.5 Serial Port Interface

The Senses 6100 series panel PCs have four onboard serial ports, COM1 (RS-232/485/422 selectable), COM2 (RS-232), COM3 (RS-232), COM4 (RS-232 used for touchscreen).

COM1, COM2 and COM3 have DB-9 connectors and the following table shows the pin assignments of the connector.

Pin	Signal	Pin	Signal
1	DCD, Data Carrier Detect	6	DSR, Data Set Ready
2	RXD, Receive Data	7	RTS, Request To Send
3	TXD, Transmit Data	8	CTS, Clear To Send
4	DTR, Data Terminal Ready	9	RI/+5V/+12 V Ring Indicator
5	GND, Ground		

COM1/COM2/COM3

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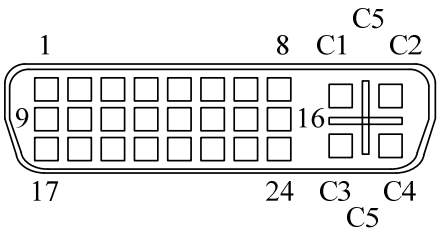
2.6 Graphics (DVI-I or VGA)

The Senses 6172 / 6170 / 6152 have DVI-I interface connectors with DVI-VGA adaptors while the Senses 6150LP has a VGA connector. The DVI-I interface is able to connect to an expansion CRT monitor, and the system can display on both the flat panel and the CRT simultaneously.

2.6.1 DVI (For Senses 6172 / 6170 / 6152)

Pin	Signal	Pin	Signal
1	TX2-	2	TX2+
3	Ground	4	CRT_SPD_CLK
5	CRT_SPD DATA	6	DVI_SPD_CLK
7	DVI_SPD DATA	8	CRT-VSYNC
9	TX1-	10	TX1+
11	Ground	12	NC
13	NC	14	VGAVCC
15	Ground	16	FPDETECT
17	TX0-	18	TX0+
19	Ground	20	NC
Pin	**Signal**	**Pin**	**Signal**
21	NC	22	Ground
23	TXC+	24	TXC-
C1	CRT-RED	C2	CRT-GREEN
C3	CRT-BLUE	C4	CRT-HSYNC
C5	VGAGND		



NOTE *It doesn't support display in LCD and DVI-D simultaneously. DVI-D is only available after booting up in Windows XP.*

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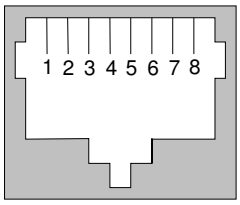
2.6.2 VGA (For Senses 6150LP)

The Senses 6150LP has an analogue RGB interface connector. It is able to connect to an expansion CRT monitor, and the system can display on both the flat panel and the CRT simultaneously.

2.7 Ethernet

The Senses 6100 series panel PCs provide dual NE2000 compatible Ethernet (RJ-45) interfaces. For network connection, just plug in one cable end of the system's 10/100/1000-Base-T Hub into a standard RJ-45 connector. Please refer to detailed pin assignment list below:

Pin	Signal
1	TX+ (Data transmission positive
2	TX- (Data transmission negative)
3	Rx+(Data reception positive)
4	RJ45 termination
5	RJ45 termination
6	Rx- (Data reception negative)
7	RJ45 termination
8	RJ45 termination



RJ-45

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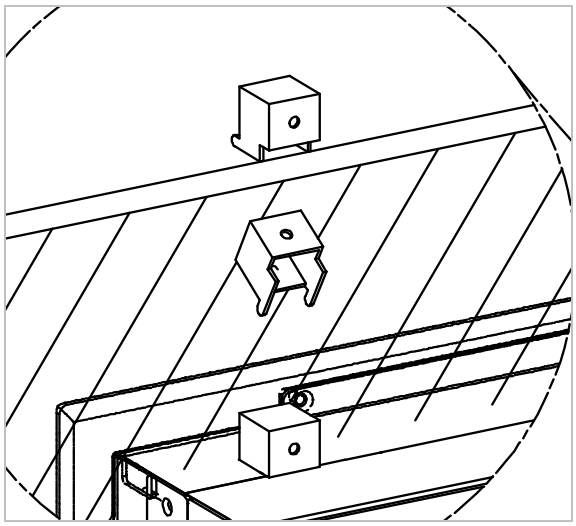
2.8 Mounting

There are several mounting methods available for the Senses 6100 series panel PCs. These are listed below.

2.8.1 Panel Mounting

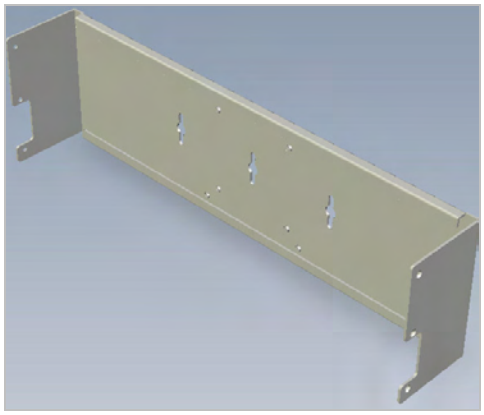
All Senses 6100 panel PCs are designed for panel mount applications. To panel mount one of these, the standard mounting kit (included in the system packaging) is needed.



2.8.2 Wall Mounting

The Senses 6170 / 6150LP are suited to wall mounting applications. The wall mounting kit is optional. Please refer to the illustrations for mounting instructions.

- **Step 1** Use 6 screws to fix the wall mounting bracket to the rear of the panel PC.



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- **Step 2** Complete the wall mount installation.

2.8.3 Rack Mounting

All Senses 6100 panel PCs are suited to rackmount applications. The rack mounting kit is optional. Please refer to the following for installation instructions.

- **Step 1** Attach the rackmount brackets by fixing 5 screws to each side of the panel PC.

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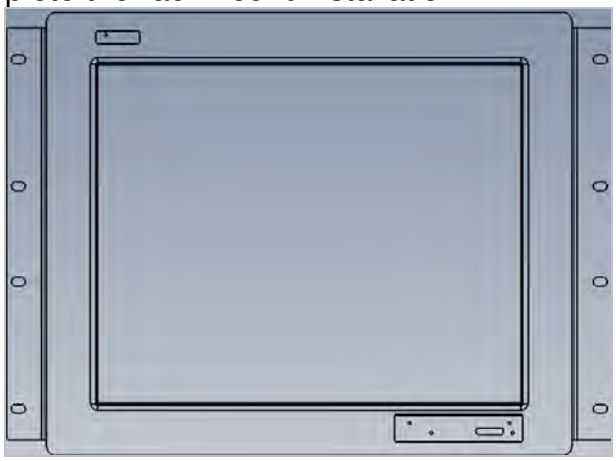
- **Step 2** Complete the rackmount installation.



2.8.4 VESA Mounting

The Senses 6170 / 6150LP are suited to VESA mount applications. These include 75 x 75 mm and 100 x 100 mm VESA mount. The VESA mount bracket is the same as the wall mount bracket. Please refer to the following steps for installation instructions.

- **Step 1** Assemble wall / VESA mount bracket.

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- **Step 2** Fix the VESA arm to complete installation.

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Chapter 3

Phoenix-Award BIOS Utility

The Phoenix-Award BIOS provides users with a built-in Setup program to modify basic system configuration. All configured parameters are stored in a battery-backed-up RAM (CMOS RAM) to save the Setup information whenever the power is turned off.

3.1 Entering Setup

There are two ways to enter the Setup program. You may either turn ON the computer and press <Del> immediately, or press the <Del> and/or <Ctrl>, <Alt>, and <Esc> keys simultaneously when the following message appears at the bottom of the screen during POST (Power on Self Test).

TO ENTER SETUP PRESS DEL KEY

If the message disappears before you respond and you still want to enter Setup, please restart the system to try it again. Turning the system power OFF and ON, pressing the “RESET” button on the system case or simultaneously pressing <Ctrl>, <Alt>, and <Del> keys can restart the system. If you do not press keys at the right time and the system doesn’t boot, an error message will be displayed as follows:

PRESS <F1> TO CONTINUE, <CTRL-ALT-ESC> OR <DEL> TO ENTER SETUP

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3.2 Control Keys

Up arrow	Move cursor to the previous item
Down arrow	Move cursor to the next item
Left arrow	Move cursor to the item on the left hand
Right arrow	Move to the item on the right hand
Esc key	Main Menu -- Quit and delete changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
PgUp/"+" key	Increase the numeric value or make changes
PgDn/"–" key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
(Shift) F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Reserved
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the Setup default, only for Option Page Setup Menu
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

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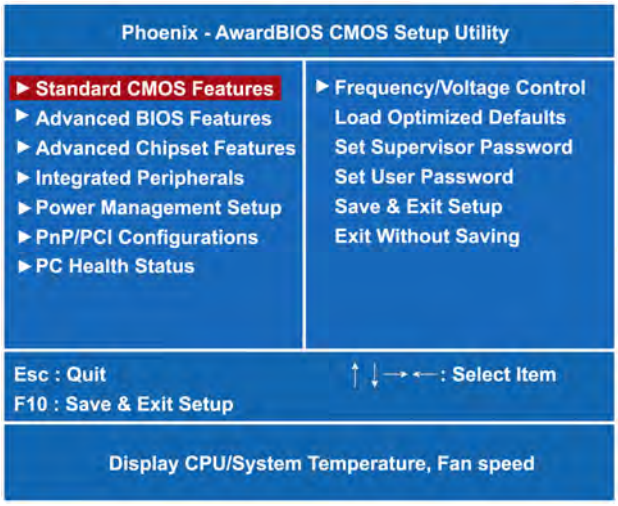
3.3 Getting Help

- **Main Menu**
  The online description of the highlighted setup function is displayed at the bottom of the screen.

- **Status Page Setup Menu/Option Page Setup Menu**
  Press <F1> to display a small Help window that provides the description of using appropriate keys and possible selections for highlighted items. Press <F1> or <Esc> to exit the Help Window.

3.4 The Main Menu

Once you enter the Award BIOS CMOS Setup Utility, the Main Menu appears on the screen. In the Main Menu, there are several Setup functions and a couple of Exit options for your selection. Use arrow keys to select the Setup Page you intend to configure then press <Enter> to accept or enter its sub-menu.



(For Senses 6172 / 6170 / 6152)

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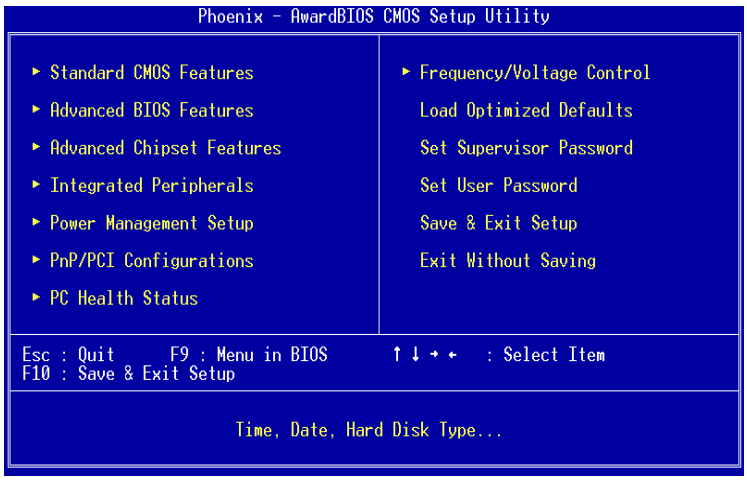
Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features
Advanced BIOS Features
Advanced Chipset Features
Integrated Peripherals
Power Management Setup
PnP/PCI Configurations
PC Health Status
Frequency/Voltage Control
Load Optimized Defaults
Set Supervisor Password
Set User Password
Save & Exit Setup
Exit Without Saving
Esc : Quit F9 : Menu in BIOS ↑ ↓ → ← : Select Item
F10 : Save & Exit Setup
Time, Date, Hard Disk Type...

(For Senses 6150LP)

***NOTE**: If your computer will not boot after making and saving system changes with Setup, the Award BIOS will reset your system to the CMOS default settings via its built-in override feature.*

It is strongly recommended that you should avoid changing the chipset's defaults. Both Award and your system manufacturer have carefully set up these defaults that provide the best performance and reliability.

3.5 Standard CMOS Setup Menu

The Standard CMOS Setup Menu displays basic information about your system. Use arrow keys to highlight each item, and use the <PgUp> or <PgDn> keys to select the value you want in each item.

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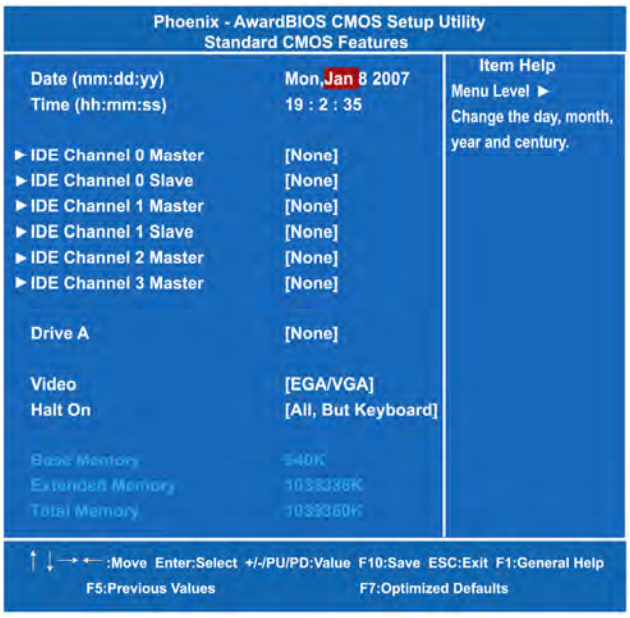
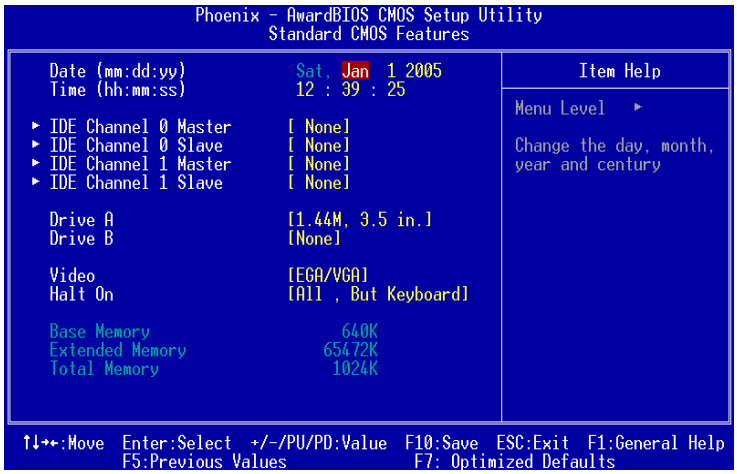

Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features
Date (mm:dd:yy) Mon,Jan 8 2007
Time (hh:mm:ss) 19 : 2 : 35
► IDE Channel 0 Master [None]
► IDE Channel 0 Slave [None]
► IDE Channel 1 Master [None]
► IDE Channel 1 Slave [None]
► IDE Channel 2 Master [None]
► IDE Channel 3 Master [None]
Drive A [None]
Video [EGA/VGA]
Halt On [All, But Keyboard]
Item Help
Menu Level ►
Change the day, month, year and century.
:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)


Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features
Date (mm:dd:yy) Sat, Jan 1 2005
Time (hh:mm:ss) 12 : 39 : 25
► IDE Channel 0 Master [None]
► IDE Channel 0 Slave [None]
► IDE Channel 1 Master [None]
► IDE Channel 1 Slave [None]
Drive A [1.44M, 3.5 in.]
Drive B [None]
Video [EGA/VGA]
Halt On [All , But Keyboard]
Base Memory 640K
Extended Memory 65472K
Total Memory 1024K
Item Help
Menu Level ►
Change the day, month, year and century
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7: Optimized Defaults

(For Senses 6150LP)

- **Date**
  The date format is <day>, <date> <month> <year>. Press <F3> to show the calendar.

day	It is determined by the BIOS and read only, from Sunday to Saturday.
date	It can be keyed with the numerical/ function key, from 1 to 31.
month	It is from January to December.
year	It shows the current year of BIOS.

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- **Time**
  This item shows current time of your system with the format <hour> <minute> <second>. The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

- **IDE Primary Master/Primary Slave**
  These items identify the types of each IDE channel installed in the computer. There are 45 predefined types (Type 1 to Type 45) and 2 user definable types (Type User) for Enhanced IDE BIOS. Press <PgUp>/<+> or <PgDn>/<–> to select a numbered hard disk type, or directly type the number and press <Enter>. Please note that the drive specifications must match the drive table. The hard disk will not work properly if improper information is entered. If the hard disk drive type does not match or is not listed, Type User can be used to manually define the drive type.

  If selecting Type User, you will be asked to enter related information in the following items. Directly key in the information and press <Enter>. This information should be provided in the documentation from the hard disk vendor or the system manufacturer.

  If the HDD interface controller supports ESDI, select “Type 1”.
  If the HDD interface controller supports SCSI, select “None”.
  If the HDD interface controller supports CD-ROM, select “None”.

CYLS.	number of cylinders	**LANDZONE**	landing zone
HEADS	number of heads	**SECTORS**	number of sectors
PRECOMP	write precom	**MODE**	HDD access mode

  If there is no hard disk drive installed, select NONE and press <Enter>.

- **Dive A type/Drive B type (For Senses 6150LP)**

The category identifies the types of floppy disk drive A or drive B installed in the computer.

None	No floppy drive installed
360K, 3.5 in	3.5 inch PC-type standard drive; 360KB Mini ITXcity
1.2M, 3.5 in	3.5 inch AT-type high-density drive; 1.2MB Mini ITXcity

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720K, 3.5 in	3.5 inch double-sided drive; 720KB Mini ITXcity
1.44M, 3.5 in	3.5 inch double-sided drive; 1.44MB Mini ITXcity
2.88M, 3.5 in	3.5 inch double-sided drive; 2.88MB Mini ITXcity

- **Video (For Senses 6172 / 6170 / 6152)**
  Select the display adapter type for your system.

- **Halt On**
  This item determines whether the system will halt or not, if an error is detected while powering up.

No errors	The system booting will halt on any errors detected. (default)
All errors	Whenever BIOS detects a non-fatal error, the system will stop and you will be prompted.
All, But Keyboard	The system booting will not stop for a keyboard error; it will stop for other errors.
All, But Diskette	The system booting will not stop for a disk error; it will stop for other errors.
All, But Disk/Key	The system booting will not stop for a keyboard or disk error; it will stop for other errors.

Press <Esc> to return to the Main Menu page.

3.6 Advanced BIOS Features

This section allows you to configure and improve your system, by allowing you to set up system features according to your preference.

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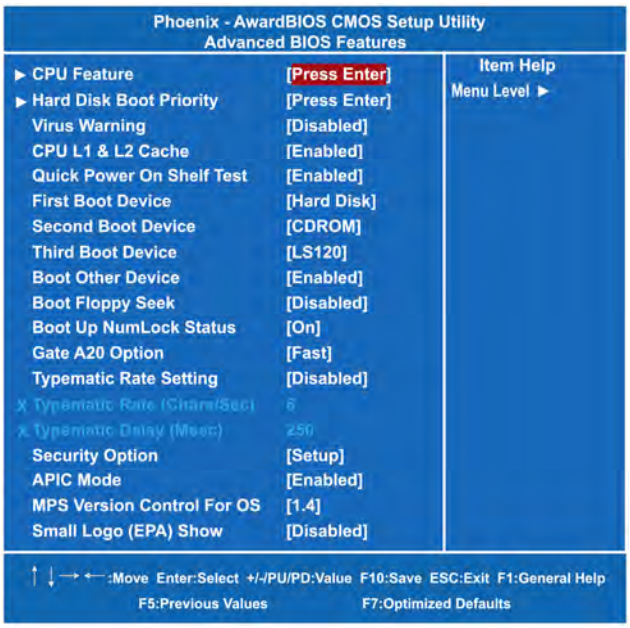
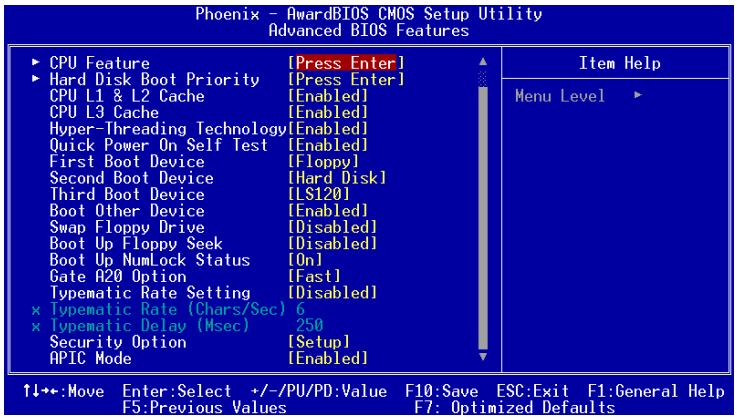

Phoenix - AwardBIOS CMOS Setup Utility
Advanced BIOS Features
CPU Feature [Press Enter]
Hard Disk Boot Priority [Press Enter]
Virus Warning [Disabled]
CPU L1 & L2 Cache [Enabled]
Quick Power On Shelf Test [Enabled]
First Boot Device [Hard Disk]
Second Boot Device [CDROM]
Third Boot Device [LS120]
Boot Other Device [Enabled]
Boot Floppy Seek [Disabled]
Boot Up NumLock Status [On]
Gate A20 Option [Fast]
Typematic Rate Setting [Disabled]
Security Option [Setup]
APIC Mode [Enabled]
MPS Version Control For OS [1.4]
Small Logo (EPA) Show [Disabled]
Item Help
Menu Level ▶
:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)


Phoenix - AwardBIOS CMOS Setup Utility
Advanced BIOS Features
CPU Feature [Press Enter]
Hard Disk Boot Priority [Press Enter]
CPU L1 & L2 Cache [Enabled]
CPU L3 Cache [Enabled]
Hyper-Threading Technology [Enabled]
Quick Power On Self Test [Enabled]
First Boot Device [Floppy]
Second Boot Device [Hard Disk]
Third Boot Device [LS120]
Boot Other Device [Enabled]
Swap Floppy Drive [Disabled]
Boot Up Floppy Seek [Disabled]
Boot Up NumLock Status [On]
Gate A20 Option [Fast]
Typematic Rate Setting [Disabled]
x Typematic Rate (Chars/Sec) 6
x Typematic Delay (Msec) 250
Security Option [Setup]
APIC Mode [Enabled]
Item Help
Menu Level ▸
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7: Optimized Defaults

(For Senses 6150LP)

- **CPU Feature**

Scroll to this item and press <Enter> to view the CPU Feature sub menu.

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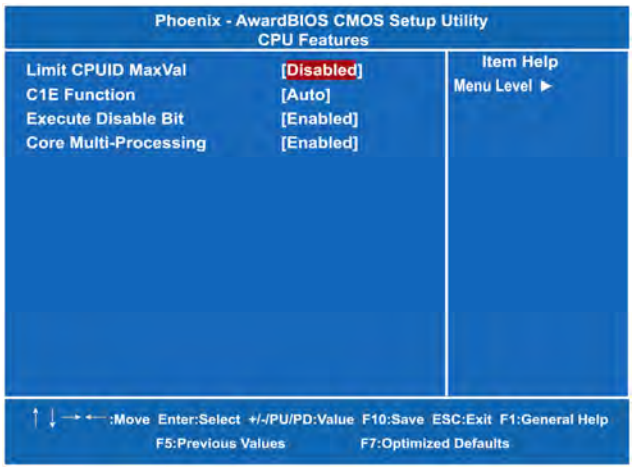
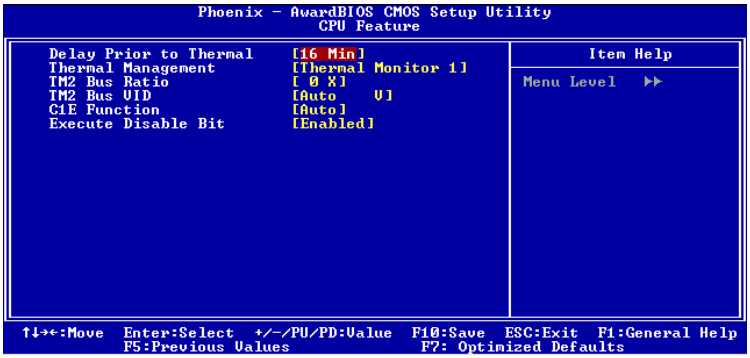
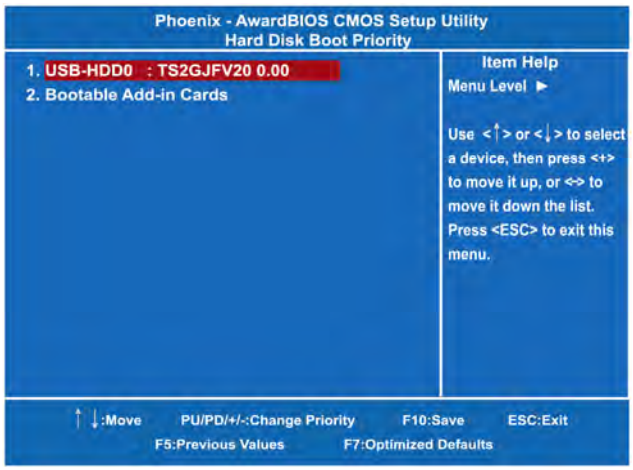


(For Senses 6172 / 6170 / 6152)


Phoenix - AwardBIOS CMOS Setup Utility
CPU Feature
Delay Prior to Thermal [16 Min]
Thermal Management [Thermal Monitor 1]
TM2 Bus Ratio [0 X]
TM2 Bus VID [Auto V]
C1E Function [Auto]
Execute Disable Bit [Enabled]
Item Help
Menu Level ▸▸
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7: Optimized Defaults

(For Senses 6150LP)

- **Hard Disk Boot Priority**
  Scroll to this item and press <Enter> to view the sub menu to decide the disk boot priority.


Phoenix - AwardBIOS CMOS Setup Utility
Hard Disk Boot Priority
1. USB-HDD0 : TS2GJFV20 0.00
2. Bootable Add-in Cards
Item Help
Menu Level ►
Use <↑> or <↓> to select a device, then press <+> to move it up, or <-> to move it down the list. Press <ESC> to exit this menu.
↑↓:Move PU/PD/+/-:Change Priority F10:Save ESC:Exit
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)

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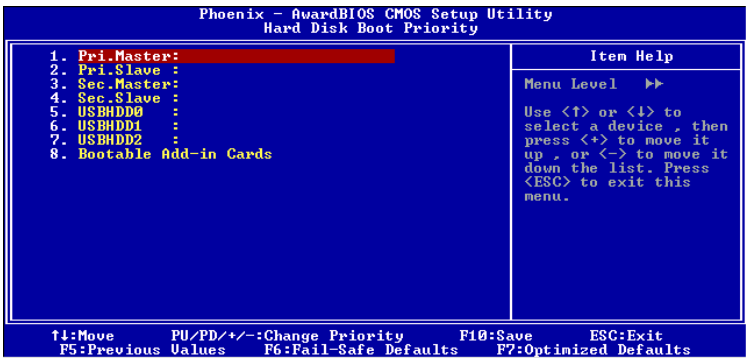
Phoenix - AwardBIOS CMOS Setup Utility
Hard Disk Boot Priority
1. Pri.Master:
2. Pri.Slave :
3. Sec.Master:
4. Sec.Slave :
5. USBHDD0 :
6. USBHDD1 :
7. USBHDD2 :
8. Bootable Add-in Cards
Item Help
Menu Level ▶▶
Use <↑> or <↓> to select a device , then press <+> to move it up , or <-> to move it down the list. Press <ESC> to exit this menu.
↑↓:Move PU/PD/+/-:Change Priority F10:Save ESC:Exit
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

(For Senses 6150LP)

- **Virus Warning (For Senses 6172 / 6170 / 6152)**
  This option flashes on the screen. During and after the system boot up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system with the following message. You can run an anti-virus program to locate the problem. The default setting is “Disabled”.

> ***! WARNING !***
> *Disk boot sector is to be modified*
> *Type “Y” to accept write or “N” to abort write*
> *Award Software, Inc.*

Enabled	It automatically activates while the system boots up and a warning message appears for an attempt to access the boot sector or hard disk partition table.
Disabled	No warning message will appear for attempts to access the boot sector or hard disk partition table.

NOTE *This function is only available with DOS and other operating systems that do not trap INT13.*

- **CPU L1 & L2 Cache**
  These two options speed up memory access. However, it depends on the CPU/chipset design. The default setting is *“Enabled”*. CPUs with no built-in internal cache will not provide the “CPU Internal Cache” item on the menu.

Enabled	Enable cache
Disabled	Disable cache

- **Hyper-Threading Technology (For Senses 6150LP)**
  Use this item to enable or disable Hyper-Threading Technology,

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which makes a single physical processor perform multi-tasking function as two logical ones.

- **Quick Power On Self Test**
  This option speeds up Power on Self Test (POST) after you turn on the system power. If set as Enabled, BIOS will shorten or skip some check items during POST. The default setting is “Enabled”.

Enabled	Enable Quick POST
Disabled	Normal POST

- **First/Second/Third Boot Device**
  These items let you select the 1st, 2nd, and 3rd devices that the system will search for during its boot-up sequence. Devices include Floppy, LS120, ZIP100, HDD0~3, SCSI, and CDROM.

- **Swap Floppy Drive (For Senses 6150LP)**
  This allows you to determine whether to enable Swap Floppy Drive or not. When enabled, the BIOS swap floppy drive assignments so that Drive A becomes Drive B, and Drive B becomes Drive A. By default, this field is set to Disabled.

- **Boot Other Device**
  This item allows the user to enable/disable the boot device not listed on the First/Second/Third boot devices option above. The default setting is “*Enabled”*.

- **Boot Up Floppy Seek**
  During POST, BIOS will determine the floppy disk drive type, 40 or 80 tracks. 360KB type is 40 tracks while 720KB, 1.2MB and 1.44MB are all 80 tracks. The default value is “Enabled”.

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720KB, 1.2MB or 1.44MB drive type as they are all 80 tracks.
Disabled	BIOS will not search for the type of floppy disk drive by track number. There will be no warning message displayed if the drive installed is 360KB.

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- **Boot Up Num Lock Status**

  This sets the Num Lock status when the system is powered on. The default value is *"On"*.

- **Gate A20 Option**

  The default value is *"Fast"*.

Normal	The A20 signal is controlled by keyboard controller or chipset hardware.
Fast	Default: Fast. The A20 signal is controlled by Port 92 or chipset specific method.

- **Typematic Rate Setting**

  This item determines the typematic rate of the keyboard. The default value is *"Disabled"*.

Enabled	Enable typematic rate and typematic delay programming.
Disabled	Disable typematic rate and typematic delay programming. The system BIOS will use default value of these 2 items, controlled by keyboard.

- **Typematic Rate (Chars/Sec)**

  This option refers to character numbers typed per second by the keyboard. The default value is *"6"*.

6	6 characters per second
8	8 characters per second
10	10 characters per second
12	12 characters per second
15	15 characters per second
20	20 characters per second
24	24 characters per second
30	30 characters per second

- **Typematic Delay (Msec)**

  This option defines how many milliseconds must elapse before a held-

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down key begins generating repeat characters. The default value is *"250"*.

250	250 msec
500	500 msec
750	750 msec
1000	1000 msec

- **Security Option**
  This item allows you to limit access to the system and Setup, or just to Setup. The default value is *"Setup"*.

System	If a wrong password is entered at the prompt, the system will not boot, but the access to Setup will be denied.
Setup	If a wrong password is entered at the prompt, the system will boot, but the access to Setup will be denied.

NOTE *To disable the security, select PASSWORD SETTING at Main Menu and then you will be asked to enter a password. Do not type anything, just press <Enter> and it will disable the security. Once the security is disabled, the system will boot and you can enter Setup freely.*

- **APIC Mode**
  Use this item to enable or disable APIC (Advanced Programmable Interrupt Controller) mode that provides symmetric multi-processing (SMP) for systems.

- **MPS Version Control For OS**
  This item specifies the version of the Multiprocessor Specification (MPS). Version 1.4 has extended configuration tables to improve support for multiple PCI bus configurations and provide future expandability.

- **Small Logo (EPA) Show (For Senses 6172 / 6170 / 6152)**
  If enabled, the EPA logo will appear during system booting up; if disabled, the EPA logo will not appear.

Press <Esc> to return to the Main Menu page.

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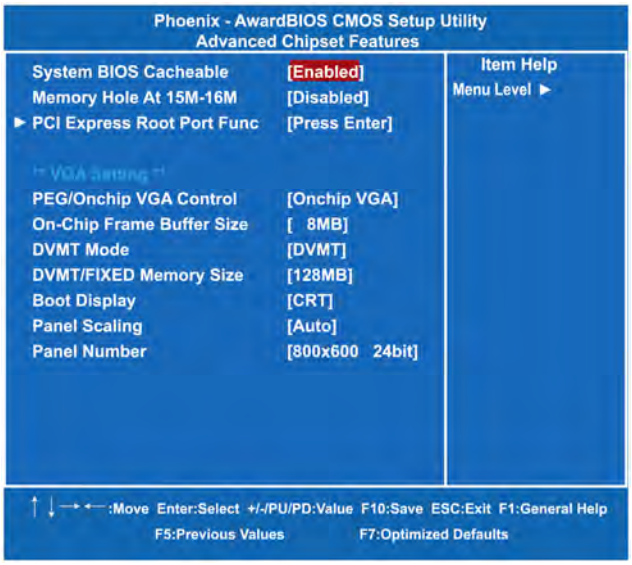
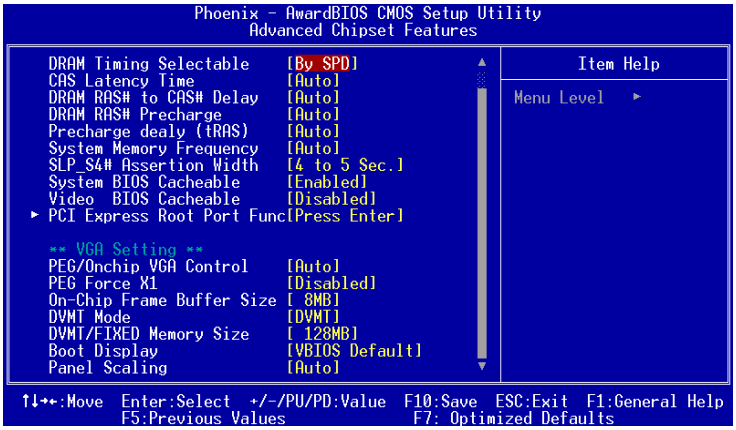
3.7 Advanced Chipset Features

This section contains previously optimised chipset features on the board, you are strongly recommended to leave all items on this page at their default values unless you are very familiar with the technical specifications of your system hardware.


Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features
System BIOS Cacheable [Enabled]
Memory Hole At 15M-16M [Disabled]
PCI Express Root Port Func [Press Enter]
PEG/Onchip VGA Control [Onchip VGA]
On-Chip Frame Buffer Size [8MB]
DVMT Mode [DVMT]
DVMT/FIXED Memory Size [128MB]
Boot Display [CRT]
Panel Scaling [Auto]
Panel Number [800x600 24bit]
Item Help
Menu Level ▶
:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)


Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features
DRAM Timing Selectable [By SPD]
CAS Latency Time [Auto]
DRAM RAS# to CAS# Delay [Auto]
DRAM RAS# Precharge [Auto]
Precharge dealy (tRAS) [Auto]
System Memory Frequency [Auto]
SLP_S4# Assertion Width [4 to 5 Sec.]
System BIOS Cacheable [Enabled]
Video BIOS Cacheable [Disabled]
PCI Express Root Port Func [Press Enter]
** VGA Setting **
PEG/Onchip VGA Control [Auto]
PEG Force X1 [Disabled]
On-Chip Frame Buffer Size [8MB]
DVMT Mode [DVMT]
DVMT/FIXED Memory Size [128MB]
Boot Display [VBIOS Default]
Panel Scaling [Auto]
Item Help
Menu Level ▶
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7: Optimized Defaults

(For Senses 6150LP)

- **DRAM Timing Selectable (For Senses 6150LP)**
  Use this item to increase the timing of the memory. This is related to the cooling of memory.

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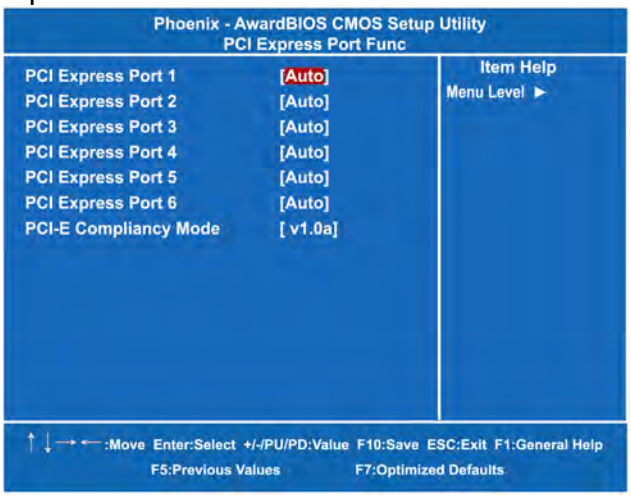
- **CAS Latency time (For Senses 6150LP)**
  You can select CAS latency time in HCLKs 2, 3, or Auto. The board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.

- **System Cacheable BIOS**
  Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The default value is *"Disabled"*.

- **Memory Hole At 15M-16M (For Senses 6172 / 6170 / 6152)**
  You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

- **Video BIOS Cacheable (For Senses 6150LP)**
  This item allows you to change the Video BIOS location from ROM to RAM. Video Shadow will increase the video speed.

- **PCI Express Root Port Func**
  Scroll to this item and press <Enter> to view the sub menu to determine the PCI Express port.


Phoenix - AwardBIOS CMOS Setup Utility
PCI Express Port Func
PCI Express Port 1 [Auto]
PCI Express Port 2 [Auto]
PCI Express Port 3 [Auto]
PCI Express Port 4 [Auto]
PCI Express Port 5 [Auto]
PCI Express Port 6 [Auto]
PCI-E Compliancy Mode [v1.0a]
Item Help
Menu Level ►
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)

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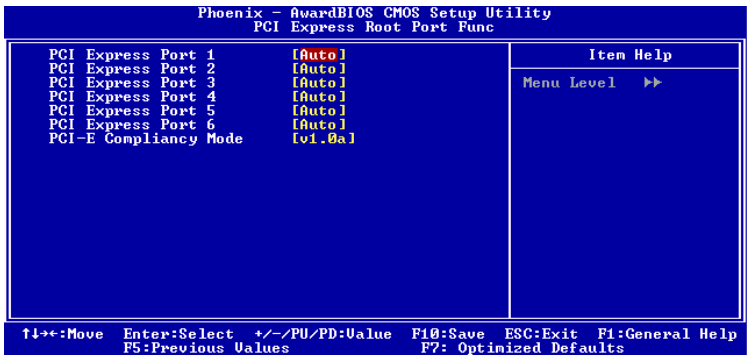
Phoenix - AwardBIOS CMOS Setup Utility
PCI Express Root Port Func
PCI Express Port 1 [Auto]
PCI Express Port 2 [Auto]
PCI Express Port 3 [Auto]
PCI Express Port 4 [Auto]
PCI Express Port 5 [Auto]
PCI Express Port 6 [Auto]
PCI-E Compliancy Mode [v1.0a]
Item Help
Menu Level ▸▸
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7: Optimized Defaults
(For Senses 6150LP)

Press <Esc> to return to the Advanced Chipset Features page.

***** VGA Setting *****

- **PEG/Onchip VGA Control (For Sense 6172 / 6170 / 6152)**
  Use this item to choose the primary display card.

- **On-Chip Frame Buffer Size (For Sense 6172 / 6170 / 6152)**
  Use this item to set the VGA frame buffer size.

- **DVMT Mode (For Sense 6172 / 6170 / 6152)**
  DVMT (Dynamic Video Memory Technology) helps you select the video mode.

- **DVMT/Fixed Memory Size (For Sense 6172 / 6170 / 6152)**
  DVMT (Dynamic Video Memory Technology) allows you to select a maximum size of dynamic amount usage of the video memory. The system will configure the video memory dependent on your application.

- **Boot Display (For Sense 6172 / 6170 / 6152)**
  This item is for Intel define ADD card only.

Press <Esc> to return to the Main Menu page.

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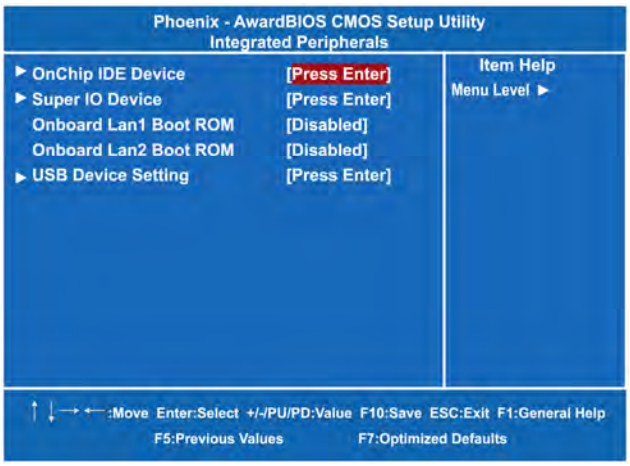
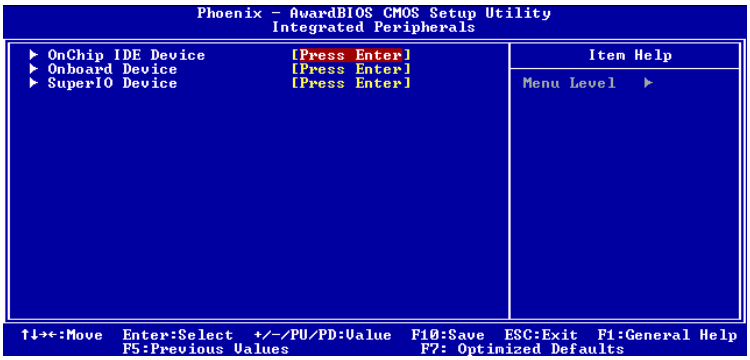
3.8 Integrated Peripherals

This section allows you to configure your SuperIO Device, IDE Function and Onboard Device.


Phoenix - AwardBIOS CMOS Setup Utility
Integrated Peripherals
OnChip IDE Device [Press Enter]
Super IO Device [Press Enter]
Onboard Lan1 Boot ROM [Disabled]
Onboard Lan2 Boot ROM [Disabled]
USB Device Setting [Press Enter]
Item Help
Menu Level ▶
:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)


Phoenix - AwardBIOS CMOS Setup Utility
Integrated Peripherals
OnChip IDE Device [Press Enter]
Onboard Device [Press Enter]
SuperIO Device [Press Enter]
Item Help
Menu Level ▶
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7: Optimized Defaults

(For Senses 6150LP)

- **OnChip IDE Device**

  Scroll to this item and press <Enter> to view the sub menu OnChip IDE Device.

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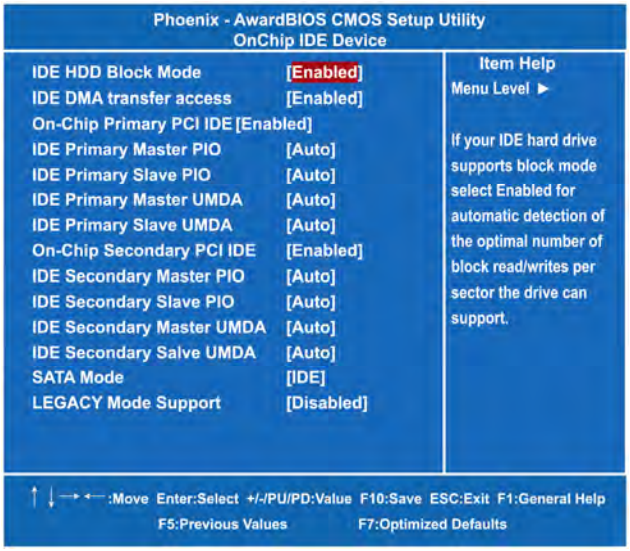
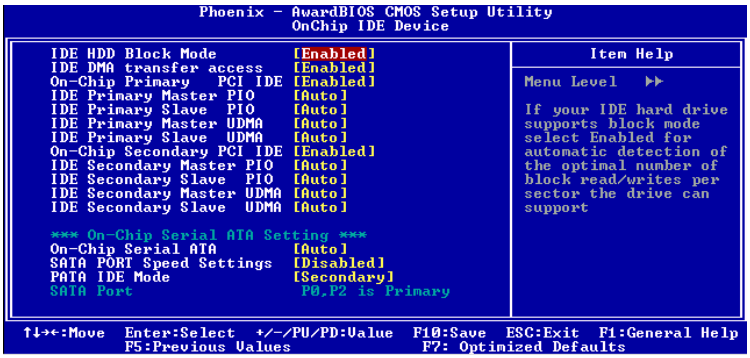

Phoenix - AwardBIOS CMOS Setup Utility
OnChip IDE Device
IDE HDD Block Mode [Enabled]
IDE DMA transfer access [Enabled]
On-Chip Primary PCI IDE [Enabled]
IDE Primary Master PIO [Auto]
IDE Primary Slave PIO [Auto]
IDE Primary Master UMDA [Auto]
IDE Primary Slave UMDA [Auto]
On-Chip Secondary PCI IDE [Enabled]
IDE Secondary Master PIO [Auto]
IDE Secondary Slave PIO [Auto]
IDE Secondary Master UMDA [Auto]
IDE Secondary Salve UMDA [Auto]
SATA Mode [IDE]
LEGACY Mode Support [Disabled]
Item Help
Menu Level ►
If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.
:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)


Phoenix - AwardBIOS CMOS Setup Utility
OnChip IDE Device
IDE HDD Block Mode [Enabled]
IDE DMA transfer access [Enabled]
On-Chip Primary PCI IDE [Enabled]
IDE Primary Master PIO [Auto]
IDE Primary Slave PIO [Auto]
IDE Primary Master UDMA [Auto]
IDE Primary Slave UDMA [Auto]
On-Chip Secondary PCI IDE [Enabled]
IDE Secondary Master PIO [Auto]
IDE Secondary Slave PIO [Auto]
IDE Secondary Master UDMA [Auto]
IDE Secondary Slave UDMA [Auto]
*** On-Chip Serial ATA Setting ***
On-Chip Serial ATA [Auto]
SATA PORT Speed Settings [Disabled]
PATA IDE Mode [Secondary]
SATA Port P0,P2 is Primary
Item Help
Menu Level ▶▶
If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7: Optimized Defaults

(For Senses 6150LP)

- **IDE HDD Block Mode**
  Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

- **IDE DMA transfer access**
  Automatic data transfer between system memory and IDE device with minimum CPU intervention. This improves data throughput and frees the CPU to perform other tasks.

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- **On-Chip Primary / Secondary PCI IDE**
  The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately. The default value is *"Enabled"*.

  NOTE *Choosing Disabled for these options will automatically remove the IDE Primary Master / Slave PIO and/or IDE Secondary Master / Slave PIO items on the menu.*

- **IDE Master / Slave PIO**
  The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 to 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

- **IDE Master/Slave UDMA**
  Select the mode of operation for the IDE drive. Ultra DMA-33/66/100/133 implementation is possible only if your IDE hard drive supports it and the operating environment
  includes a DMA driver. If your hard drive and your system software both support Ultra DMA-33/66/100/133, select Auto to enable UDMA mode by BIOS.

- **SATA Mode (For Senses 6172 / 6170 / 6152)**
  These options are for you to set up SATA mode: IDE, RAID or AHCI.

  NOTE *ICH8DO supports Advanced Host Controller Interface (AHCI) under Microsoft Windows VISTA and Microsoft Windows XP. ICH8 only supports AHCI under Microsoft Windows VISTA. These panel PCs use ICH8 and do not have onboard RAID support function.*

- **LEGACY Mode Support (For Senses 6172 / 6170 / 6152)**
  Legacy mode support allows devices to function in an operating environment that is not USB-aware.

Press <Esc> to return to the Integrated Peripherals page.

- **Onboard Device (For Senses 6150LP)**

  Scroll to this item and press <Enter> to view the sub menu Onboard Device.

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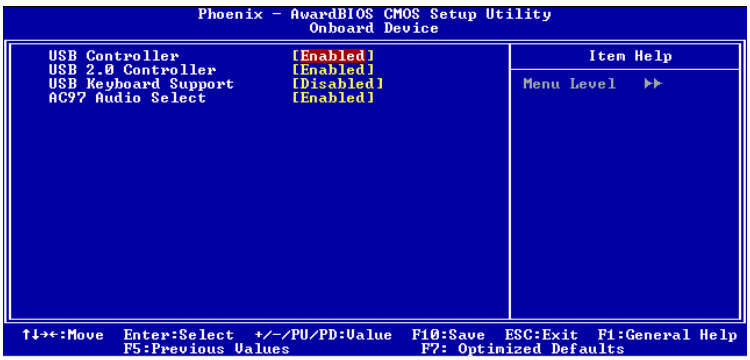
Phoenix - AwardBIOS CMOS Setup Utility
Onboard Device
USB Controller [Enabled]
USB 2.0 Controller [Enabled]
USB Keyboard Support [Disabled]
AC97 Audio Select [Enabled]
Item Help
Menu Level ▸▸
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7: Optimized Defaults

(For Senses 6150LP)

- **USB Controller**
  Enable this item if you are using the USB in the system. You should disable this item if a higher-level controller is added.

- **USB 2.0 Controller**
  Enable this item if you are using the EHCI (USB2.0) controller in the system.

- **USB Keyboard Support**
  Enable this item if the system has a Universal Serial Bus (USB) controller, and you have a USB keyboard.

- **AC'97 Audio Select**
  Use this item to enable or disable the onboard AC'97 Audio function.

Press <Esc> to return to the Integrated Peripherals page.

- **Super IO Device**

Scroll to this item and press <Enter> to view the sub menu Super IO Device.

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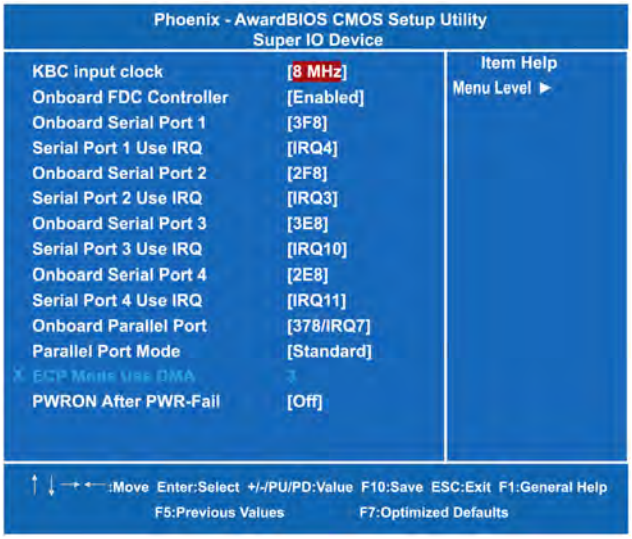
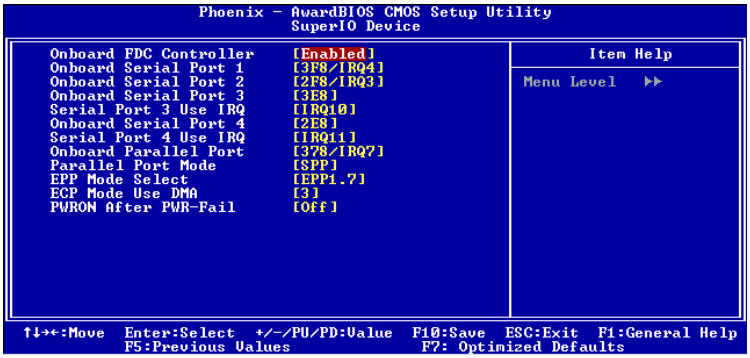

Phoenix - AwardBIOS CMOS Setup Utility
Super IO Device
KBC input clock [8 MHz]
Onboard FDC Controller [Enabled]
Onboard Serial Port 1 [3F8]
Serial Port 1 Use IRQ [IRQ4]
Onboard Serial Port 2 [2F8]
Serial Port 2 Use IRQ [IRQ3]
Onboard Serial Port 3 [3E8]
Serial Port 3 Use IRQ [IRQ10]
Onboard Serial Port 4 [2E8]
Serial Port 4 Use IRQ [IRQ11]
Onboard Parallel Port [378/IRQ7]
Parallel Port Mode [Standard]
PWRON After PWR-Fail [Off]
Item Help
Menu Level ▶
:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)


Phoenix - AwardBIOS CMOS Setup Utility
SuperIO Device
Onboard FDC Controller [Enabled]
Onboard Serial Port 1 [3F8/IRQ4]
Onboard Serial Port 2 [2F8/IRQ3]
Onboard Serial Port 3 [3E8]
Serial Port 3 Use IRQ [IRQ10]
Onboard Serial Port 4 [2E8]
Serial Port 4 Use IRQ [IRQ11]
Onboard Parallel Port [378/IRQ7]
Parallel Port Mode [SPP]
EPP Mode Select [EPP1.7]
ECP Mode Use DMA [3]
PWRON After PWR-Fail [Off]
Item Help
Menu Level ▶▶
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7: Optimized Defaults

(For Senses 6150LP)

- **Onboard FDC Controller**
  Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled in this field. The options available are Enabled, Disabled.

- **Onboard Serial Port 1/2/3/4**
  Select an address and corresponding interrupt for the serial port. Options: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

- **Serial Port 1/2/3/4 Use IRQ (For Senses 6172 / 6170 / 6152)**
  These items assign which I/O address to access onboard serial port 1/2/3/4.

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- **Onboard Paralellel Port**
  This item allows you to determine access onboard parallel port controller with which I/O address. The options available are 378H/IRQ7, 278H/IRQ5, 3BC/IRQ7, Disabled. *The 3BC option does not support any EPP modes.*

- **Parallel Port Mode**
  Select an operating mode for the onboard parallel (printer) port. Select Normal unless your hardware and software require one of the other modes offered in this field. The options available are EPP1.9, ECP, SPP, ECPEPP1.7, EPP1.7.

- **EPP Mode Select (For Senses 6150LP)**
  Select EPP port type 1.7 or 1.9.

- **ECP Mode Use DMA**
  Select a DMA channel for the parallel port for use during ECP mode.

- **PWRON After PWR-Fail**
  This item enables your computer to automatically restart or return to its operating status.

Press <Esc> to return to the Integrated Peripherals page.

- **Onboard Lan1/Lan2 Boot ROM (For Senses 6172 / 6170 / 6152)**
  Use this item to enable or disable the Boot ROM function of the onboard LAN1/LAN2 chips when the system boots up.

- **USB Device Setting (For Senses 6172 / 6170 / 6152)**
  Scroll to this item and press <Enter> to view the sub menu USB Device Setting. USB (CN16) will not work when USB2.0 Controller is disabled.

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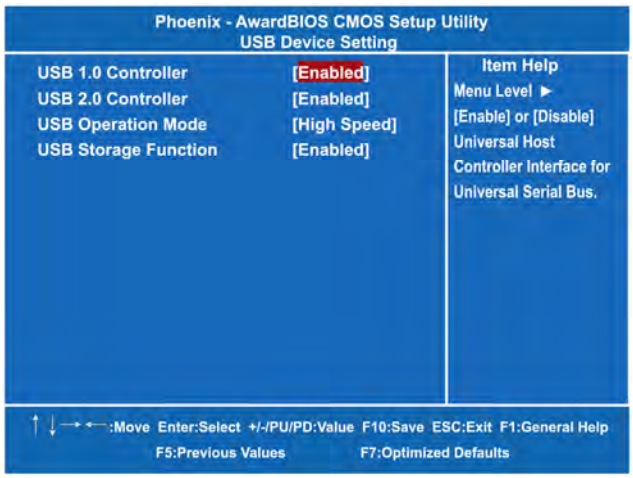
Phoenix - AwardBIOS CMOS Setup Utility
USB Device Setting
USB 1.0 Controller [Enabled]
USB 2.0 Controller [Enabled]
USB Operation Mode [High Speed]
USB Storage Function [Enabled]
Item Help
Menu Level ►
[Enable] or [Disable] Universal Host Controller Interface for Universal Serial Bus.
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)

Press <Esc> twice to return to the Main Menu page.

3.9 Power Management Setup

The Power Management Setup allows you to save energy effectively. It will shut down the hard disk and turn OFF the video display after a period of inactivity.

Phoenix - AwardBIOS CMOS Setup Utility
Power Management Setup
ACPI Function [Enabled]
ACPI Suspend Type [S3(STR)]
Run VGABIOS if S3 Resume [Auto]
Power Management [User Define]
Video Off Method [DPMS]
Video Off In Suspend [Yes]
Suspend Type [Stop Grant]
MODEM Use IRQ [3]
Suspend Mode [Disabled]
HDD Power Down [Disabled]
Soft-Off by PWR-BTTN [Instant-Off]
Wake-Up by PCI card [Enabled]
Power On by Ring [Enabled]
Resume by Alarm [Disabled]
Primary IDE 0 [Disabled]
Item Help
Menu Level ►
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)

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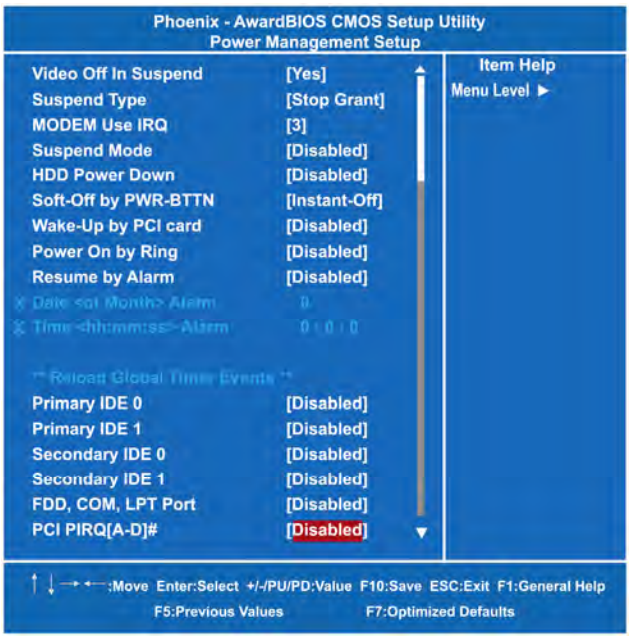
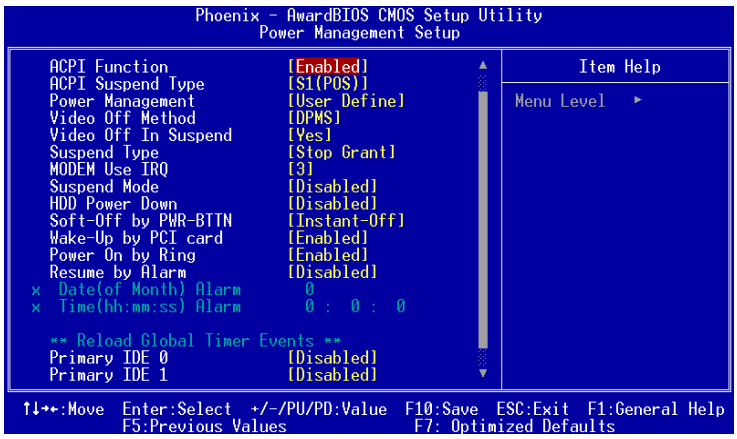

Phoenix - AwardBIOS CMOS Setup Utility
Power Management Setup
Video Off In Suspend [Yes]
Suspend Type [Stop Grant]
MODEM Use IRQ [3]
Suspend Mode [Disabled]
HDD Power Down [Disabled]
Soft-Off by PWR-BTTN [Instant-Off]
Wake-Up by PCI card [Disabled]
Power On by Ring [Disabled]
Resume by Alarm [Disabled]
Primary IDE 0 [Disabled]
Primary IDE 1 [Disabled]
Secondary IDE 0 [Disabled]
Secondary IDE 1 [Disabled]
FDD, COM, LPT Port [Disabled]
PCI PIRQ[A-D]# [Disabled]
Item Help
Menu Level ►
:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)


Phoenix - AwardBIOS CMOS Setup Utility
Power Management Setup
ACPI Function [Enabled]
ACPI Suspend Type [S1(POS)]
Power Management [User Define]
Video Off Method [DPMS]
Video Off In Suspend [Yes]
Suspend Type [Stop Grant]
MODEM Use IRQ [3]
Suspend Mode [Disabled]
HDD Power Down [Disabled]
Soft-Off by PWR-BTTN [Instant-Off]
Wake-Up by PCI card [Enabled]
Power On by Ring [Enabled]
Resume by Alarm [Disabled]
x Date(of Month) Alarm 0
x Time(hh:mm:ss) Alarm 0 : 0 : 0
** Reload Global Timer Events **
Primary IDE 0 [Disabled]
Primary IDE 1 [Disabled]
Item Help
Menu Level ►
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7: Optimized Defaults

(For Senses 6150LP)

- **ACPI Function**
  This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI). The function is always "*Enabled*".

- **ACPI Suspend Type**
  This item specifies the power saving modes for ACPI function. If your operating system supports ACPI, such as Windows 98SE, Windows ME and Windows 2000, you can choose to enter the Standby mode in S1 (POS) or S3 (STR) fashion through the setting of this field. Options are:

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[S1(POS)] The S1 sleep mode is a low power state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system context.

[S3(STR)] The S3 sleep mode is a lower power state where the information of system configuration and open applications / files is saved to main memory that remains powered while most other hardware components turn off to save energy. The information stored in memory will be used to restore the system when a “wake up” event occurs.

- **Run VGABIOS if S3 Resume (For Senses 6172 / 6170 / 6152)**
  When this item is set to Auto, the system will run VGA BIOS if it is resumed from the S3 state.

- **Power Management (For Senses 6172 / 6170 / 6152)**
  This option allows you to select the type (or degree) of power saving for Doze, Standby, and Suspend modes. The table below describes each power management mode:

Max Saving	It is maximum power savings, only available for SL CPUs. The inactivity period is 1 minute in each mode.
User Define	It sets each mode. Select time-out periods in the PM Timers section.
Min Saving	It is minimum power savings. The inactivity period is 1 hour in each mode (except the hard drive).
Disabled	Default value

- **Power Management (For Senses 6150LP)**
  This option allows you to select the type of power Management. The options available are APM, ACPI.

- **Video Off Method (For Senses 6172 / 6170 / 6152)**
  This setting determines the manner in which the monitor is blanked.

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V/H SYNC+Blank	Turns OFF vertical and horizontal synchronization ports and writes blanks to the video buffer
DPMS	Select this option if your monitor supports the Display Power Management Signalling (DPMS) standard of the Video Electronics Standards Association (VESA). Use the software supplied for your video subsystem to select video power management values.
Blank Screen	System only writes blanks to the video buffer.

- **Video Off In Suspend (For Senses 6172 / 6170 / 6152)**
  This item defines if the video is powered down when the system is put into suspend mode.

- **Suspend Type (For Senses 6172 / 6170 / 6152)**
  If this item is set to the default Stop Grant, the CPU will go into Idle Mode during power saving mode.

- **Modem Use IRQ (For Senses 6172 / 6170 / 6152)**
  If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) used by the modem. The fax/modem might have to be connected to the board Wake On Modem connector in order to use this feature.

- **Suspend Mode**
  After the selected period of system inactivity (1 minute to 1 hour), all devices except the CPU shut off. The default value is *"Disabled"*.

Disabled	System will never enter SUSPEND mode
1/2/4/6/8/10 /20/30/40 Min/1 Hr	Defines the continuous idle time before the system entering SUSPEND mode. If any item defined in (J) is enabled & active, SUSPEND timer will be reloaded

- **HDD Power Down**
  If HDD activity is not detected for the length of time specified in this field, the hard disk drive will be powered down while all other devices remain active.

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- **Soft-Off by PWR-BTTN**
  This option only works with systems using an ATX power supply. It also allows the user to define which type of soft power OFF sequence the system will follow. The default value is “Instant-Off”.

Instant-Off	This option follows the conventional manner systems perform when power is turned OFF. Instant-Off is a soft power OFF sequence requiring only the switching of the power supply button to OFF
Delay 4 Sec.	Upon turning OFF system from the power switch, this option will delay the complete system power OFF sequence by approximately 4 seconds. Within this delay period, system will temporarily enter into Suspend Mode enabling you to restart the system at once.

- **Wake-Up by PCI card**
  If enabled, the system can automatically resume when the PCI Modem or PCI LAN card receives an incoming call.

- **Power On by Ring**
  This option allows the system to resume or wake up upon detecting any ring signals coming from an installed modem. The default value is *“Enabled”*.

- **Resume by Alarm**
  If enable this item, the system can automatically resume after a fixed time in accordance with the system’s RTC (real-time clock).

**** Reload Global Timer Events ** (For Senses 6172 / 6170 / 6152)**
Global Timer (power management) events can prevent the system from entering a power saving mode or can wake the system from such a mode.

- **Primary/Secondary IDE 0/1 (For Senses 6172 / 6170 / 6152)**
  Use this item to configure the IDE devices monitored by the system.

- **FDD, COM, LPT Port (For Senses 6172 / 6170 / 6152)**
  Use this item to configure the FDD, COM and LPT ports monitored by the system.

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- **PCI PIRQ[A-D]# (For Senses 6172 / 6170 / 6152)**
  This item can be used to detect PCI device activities; if no activity, the system will enter sleep mode.

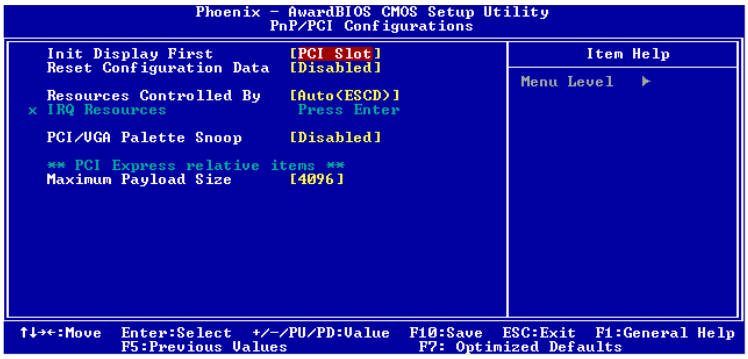
Press <Esc> to return to the Main Menu page.

3.10 PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or Peripheral Component Interconnect, is a computer bus which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only qualified and experienced users should make any changes to the default settings.

Phoenix - AwardBIOS CMOS Setup Utility
PnP/PCI Configurations
Reset Configuration Data [Disabled]
Resources Controlled By [Auto(ESCD)]
x IRQ Resources Press Enter
PCI/VGA Palette Snoop [Disabled]
** PCI Express relative items **
Maximum Payload Size [128]
Item Help
Menu Level ▶
Default is Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot.
:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)


Phoenix - AwardBIOS CMOS Setup Utility
PnP/PCI Configurations
Init Display First [PCI Slot]
Reset Configuration Data [Disabled]
Resources Controlled By [Auto(ESCD)]
x IRQ Resources Press Enter
PCI/VGA Palette Snoop [Disabled]
** PCI Express relative items **
Maximum Payload Size [4096]
Item Help
Menu Level ▶
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7: Optimized Defaults

(For Senses 6150LP)

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- **Init Display First (For Senses 6150LP)**
  This item allows you to decide to active whether PCI Slot or AGP first. The options available are PCI Slot, AGP.

- **Reset Configuration Data**
  Normally, you leave this item Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup or if installing a new add-on causes the system reconfiguration a serious conflict such that the operating system can not boot. Options: Enabled, Disabled.

- **Resources Controlled By**
  The Award Plug and Play BIOS can automatically configure all boot and Plug and Play-compatible devices. If you select Auto, all interrupt request (IRQ), DMA assignment, and Used DMA fields disappear, as the BIOS automatically assigns them. The default value is *"Manual"*.

- **IRQ Resources**
  When resources are controlled manually, assign each system interrupt to one of the following types in accordance with the type of devices using the interrupt:
  1. Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).
  2. PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

  The default value is *"PCI/ISA PnP"*.

- **PCI/VGA Palette Snoop**
  Some non-standard VGA display cards may not show colors properly. This item allows you to set whether MPEG ISA/VESA VGA Cards can work with PCI/VGA or not. When enabled, a PCI/VGA can work with a MPEG ISA/VESA VGA card; when disabled, a PCI/VGA cannot work with a MPEG ISA/VESA Card.

**** PCI Express related items ****

- **Maximum Payload Size (For Senses 6172 / 6170 / 6152)**
  When using DDR SDRAM and Buffer size selection, another consideration in designing a payload memory is the size of the buffer for data storage. Maximum Payload Size defines the maximum TLP (Transaction Layer Packet) data payload size for the device.

Press <Esc> to return to the Main Menu page.

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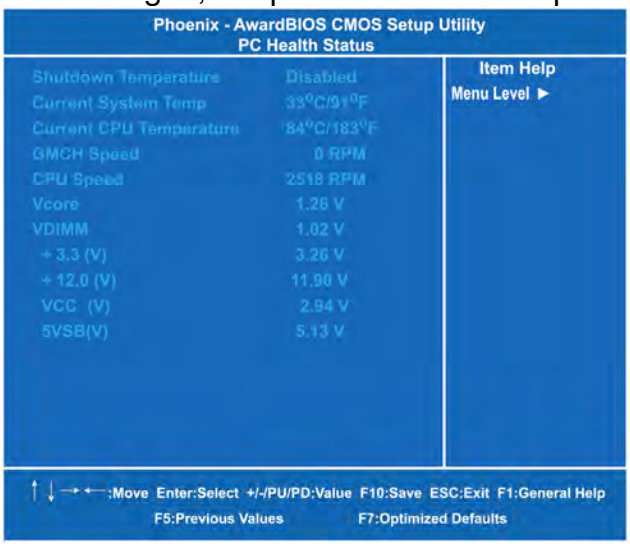
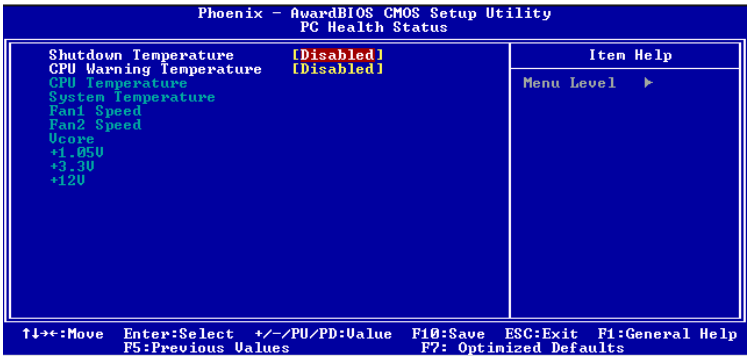
3.11 PC Health Status

This section supports hardware monitoring that lets you monitor those parameters for critical voltages, temperatures and fan speed of the board.



(For Senses 6172 / 6170 / 6152)



(For Senses 6150LP)

- **Shutdown Temperature (For Senses 6172 / 6170 / 6152)**
  This helps you set the maximum temperature the system can reach before powering down.

- **Current SYSTEM Temperature (For Senses 6172 / 6170 / 6152)**
  Shows you the current system temperature.

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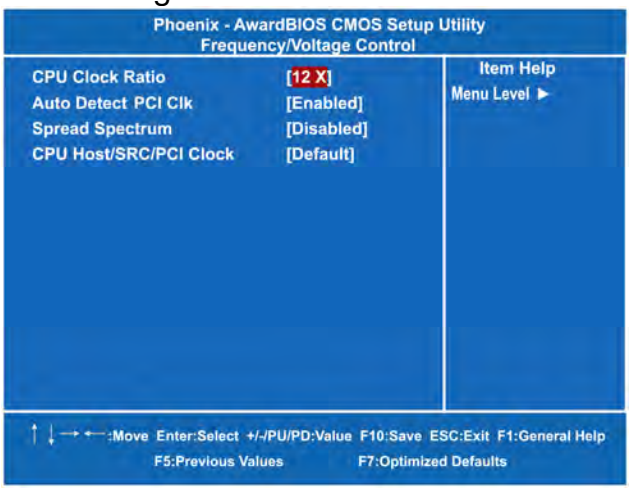
- **Current CPU Temperature**
  These read-only fields show the functions of the hardware thermal sensor by CPU thermal diode that monitors the chip blocks to ensure a stable system.

- **Vcore +3.3V/+5V/+12V/VBAT(V)/5VSB (For Senses 6172 / 6170 / 6152)**
  Show you the voltage of +3.3V/+5V/+12V.

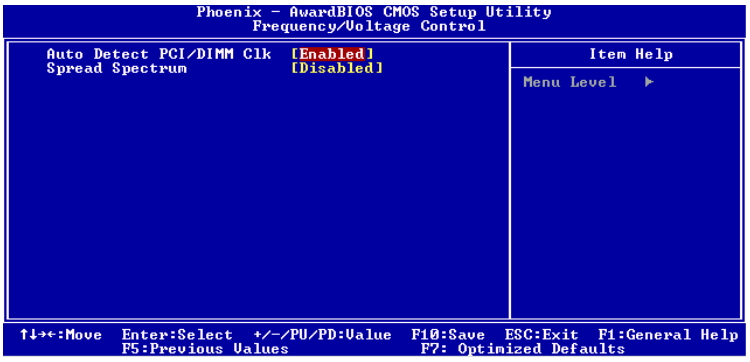
Press <Esc> to return to the Main Menu page.

3.12 Frequency/Voltage Control

This section is to control the CPU frequency and Supply Voltage, DIMM OverVoltage and AGP voltage.


Phoenix - AwardBIOS CMOS Setup Utility
Frequency/Voltage Control
CPU Clock Ratio [12 X]
Auto Detect PCI Clk [Enabled]
Spread Spectrum [Disabled]
CPU Host/SRC/PCI Clock [Default]
Item Help
Menu Level ▶
:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Optimized Defaults

(For Senses 6172 / 6170 / 6152)


Phoenix - AwardBIOS CMOS Setup Utility
Frequency/Voltage Control
Auto Detect PCI/DIMM Clk [Enabled]
Spread Spectrum [Disabled]
Item Help
Menu Level ▶
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7: Optimized Defaults

(For Senses 6150LP)

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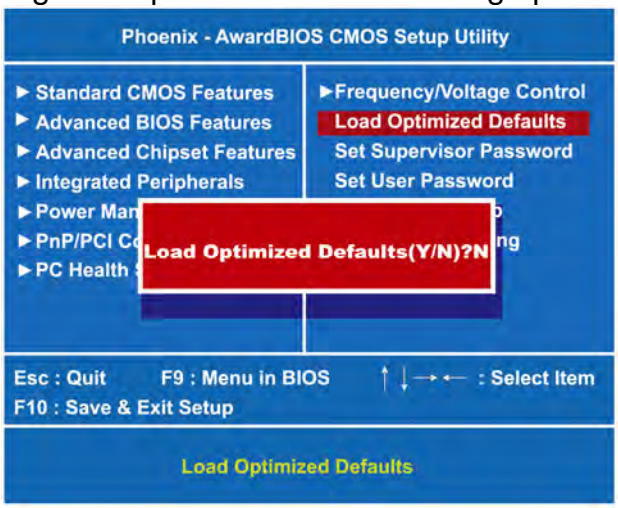
- **CPU Clock Ratio (For Senses 6172 / 6170 / 6152)**
  Use this item to select the CPU's frequency.

- **Auto Detect PCI Clk**
  The enabled item can automatically disable the clock source for a PCI slot without a module, to reduce EMI (ElectroMagnetic Interference).
- **Spread Spectrum**
  If spread spectrum is enabled, EMI (Electromagnetic Interference) generated by the system can be significantly reduced.

Press <Esc> to return to the Main Menu page.

3.13 Load Optimized Defaults

This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.



(For Senses 6172 / 6170 / 6152)

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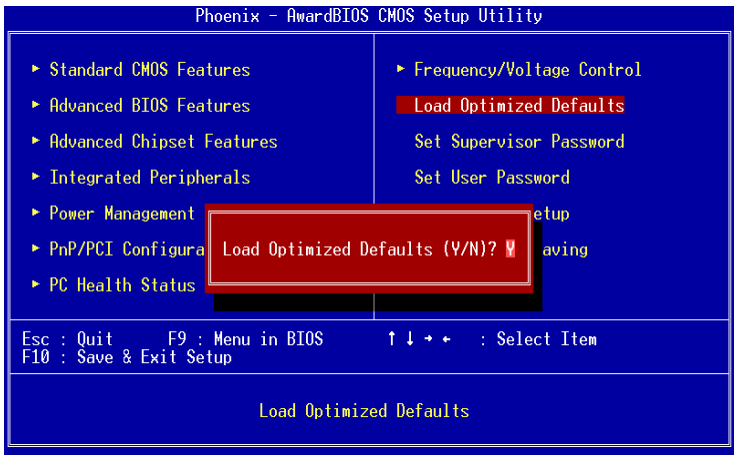
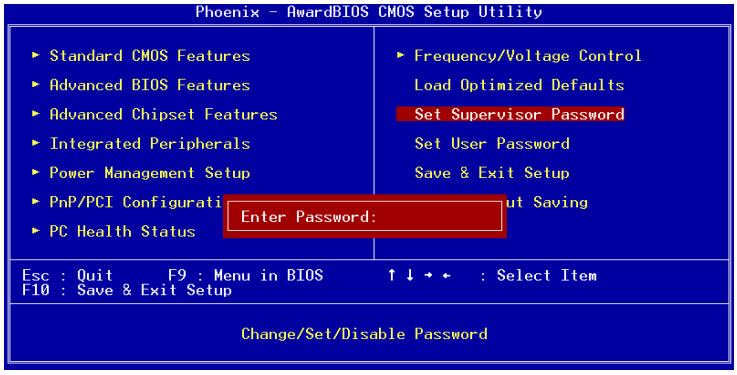

Phoenix - AwardBIOS CMOS Setup Utility
► Standard CMOS Features
► Advanced BIOS Features
► Advanced Chipset Features
► Integrated Peripherals
► Power Management
► PnP/PCI Configura
► PC Health Status
► Frequency/Voltage Control
Load Optimized Defaults
Set Supervisor Password
Set User Password
etup
aving
Load Optimized Defaults (Y/N)? Y
Esc : Quit F9 : Menu in BIOS ↑ ↓ → ← : Select Item
F10 : Save & Exit Setup
Load Optimized Defaults

(For Senses 6150LP)

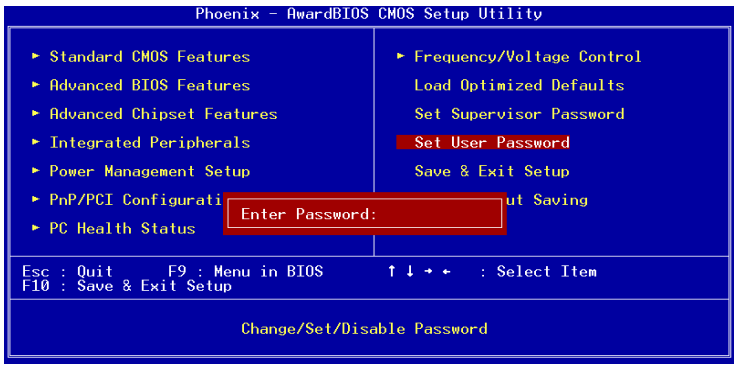
To load SETUP defaults value to CMOS SRAM, enter “Y”. If not, enter “N”.

3.14 Set Supervisor/User Password

You can set either supervisor or user password, or both. The differences between them are:


Phoenix - AwardBIOS CMOS Setup Utility
► Standard CMOS Features
► Advanced BIOS Features
► Advanced Chipset Features
► Integrated Peripherals
► Power Management Setup
► PnP/PCI Configurati
► PC Health Status
► Frequency/Voltage Control
Load Optimized Defaults
Set Supervisor Password
Set User Password
Save & Exit Setup
ut Saving
Enter Password:
Esc : Quit F9 : Menu in BIOS ↑ ↓ → ← : Select Item
F10 : Save & Exit Setup
Change/Set/Disable Password

(For Senses 6150LP)


Phoenix - AwardBIOS CMOS Setup Utility
► Standard CMOS Features
► Advanced BIOS Features
► Advanced Chipset Features
► Integrated Peripherals
► Power Management Setup
► PnP/PCI Configurati
► PC Health Status
► Frequency/Voltage Control
Load Optimized Defaults
Set Supervisor Password
Set User Password
Save & Exit Setup
ut Saving
Enter Password:
Esc : Quit F9 : Menu in BIOS ↑ ↓ → ← : Select Item
F10 : Save & Exit Setup
Change/Set/Disable Password

(For Senses 6150LP)

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1. **Supervisor password:** Can enter and change the options of the setup menus.
2. **User password:** Can enter but does not have the right to change the options of the setup menus.

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password with eight characters at most, and press <Enter>. The password typed will now clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

When a password is enabled, you have to type it every time you enter Setup. This prevents any unauthorized person from changing your system configuration.

Additionally when a password is enabled, you can also require the BIOS to request a password every time the system reboots. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to “System”, the password is required during boot up and entry into Setup. If set as “Setup”, prompting will only occur prior to entering Setup.

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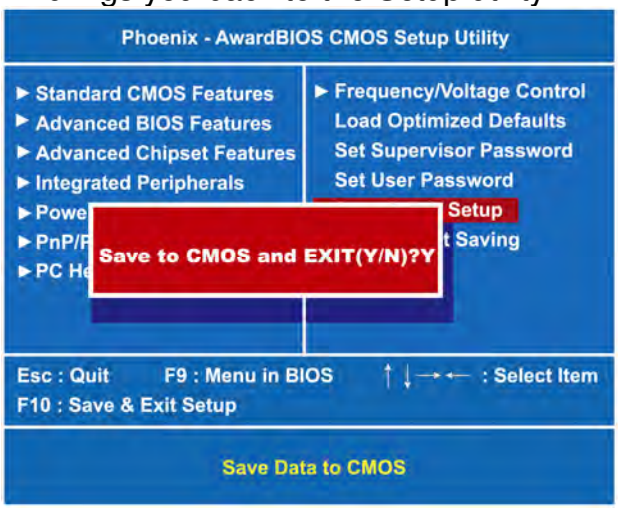
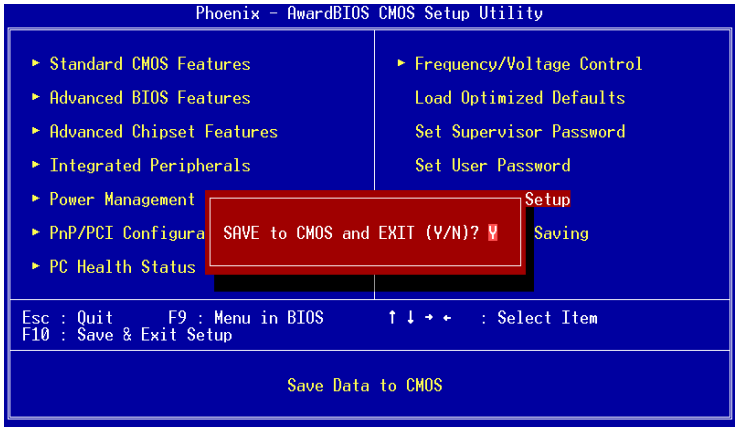
3.15 Save & Exit Setup

This allows you to determine whether or not to accept the modifications. Typing “Y” quits the setup utility and saves all changes into the CMOS memory. Typing “N” brings you back to the Setup utility.



(For Senses 6172 / 6170 / 6152)



(For Senses 6150LP)

3.16 Exit Without Saving

Select this option to exit the Setup utility without saving the changes you have made in this session. Typing “Y” will quit the Setup utility without saving the modifications. Typing “N” will return you to the Setup utility.

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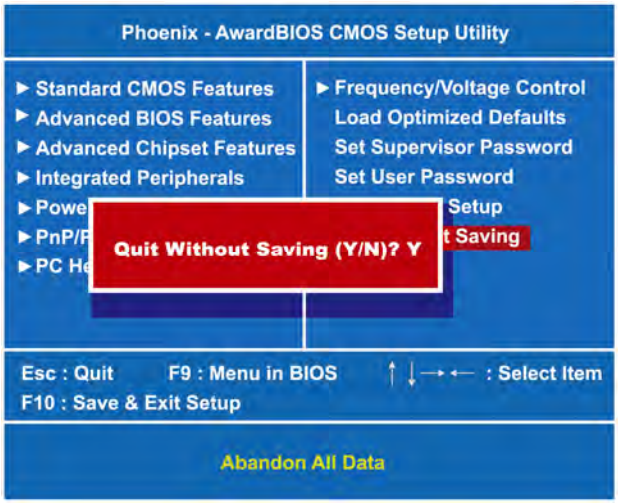
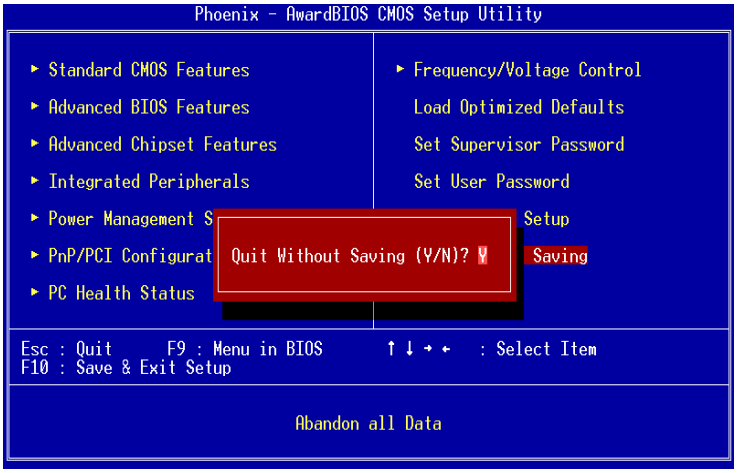


(For Senses 6172 / 6170 / 6152)



(For Senses 6150LP)

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Chapter 4

Driver installation

4.1 System

The Senses 6100 series panel PCs support Windows 2000/XP/Vista. To facilitate the installation of the system driver, please carefully read the instructions in this chapter before start installing.

1. Here is the path for the system driver:
   Senses6100series\Senses6172\Driver
   or Senses6100series\Senses6152\Driver

   And Senses6100series\Senses6170\Driver
   or Senses6100 series\Senses6150LP\Driver

2. Select all files, follow the installing procedure, and finally press OK.

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4.2 Touch Screen

4.2.1 Specification

- **For Senses 6172 / 6152**

Touch Screen	5-wire Analog Resistive type
Touch Screen Controller	DMC9000 (10-bit A/D converter inside)
Communications	RS-232
Baud Rate	19200 and 9600 baud selection
Resolution	2048 x 2048
Mode Selection	PnP or non-PnP
Power Input	5V DC
Power Consumption	12V: 23mA+ i where (i = v/touch screen sheet R) 5V: 20mA+ i where (i = v/touch screen sheet R)
Mechanical Size	60(L) x 26(W) x 8.3(H)mm
Portrait	Support 90o to 270o screen rotation
Others	Touch activate indication LED on board

- **For Senses 6170 / 6150LP**

Touch Screen	5-wire Analog Resistive type
Touch Screen Controller	DMC9000
Communications	RS-232
Baud Rate	19200 baud rate fixed
Resolution	1024 x 1024 (10 bit A/D converter inside)
Power Input	5V to 12V DC
Power Consumption	12V: 27mA+ i where (i = v/touch screen sheet R) 5V: 23mA+ i where (i = v/touch screen sheet R)
Board Size	6.0 x 2.0 cm
Portrait	Support 90o to 270o screen rotation
Static Protection	ESD device option
Others	Touch activate indication LED on board

4.2.2 Driver Installation – Windows 2000/XP/Vista

The Senses 6100 series Panel PCs provide touchscreen drivers that users can install under Windows 2000/XP/Vista. To facilitate this touch screen

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driver installation, users should read the instructions in this chapter carefully before starting the installation.

1. Insert Driver CD and follow the path to select the

   - **For Senses 6172 / 6152**
     "Senses6100series\Senses6172\Driver\Step 5. Touch" or
     "Senses6100series\Senses6152\Driver\Step 5. Touch".
   - **For Senses 6170 / 6150LP**
     "Senses6100series\Senses6170\Driver\Step 5. Touch".
     "Senses6100series\Senses6150LP\Driver\Step 5. Touch".

2. Follow the installation procedure and press OK.

3. Click Start menu and select "PenMount Utilities", and then a "PenMount Control Panel" pops out.

Note *Please choose COM4 for touch screen installation.*

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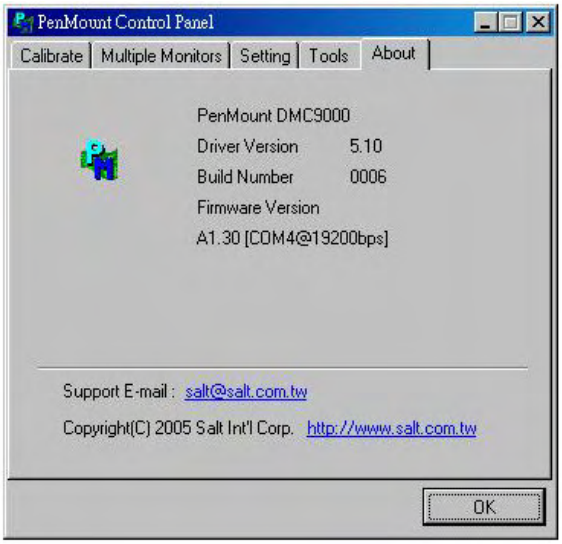

4. Select the “Standard Calibrate” tab.

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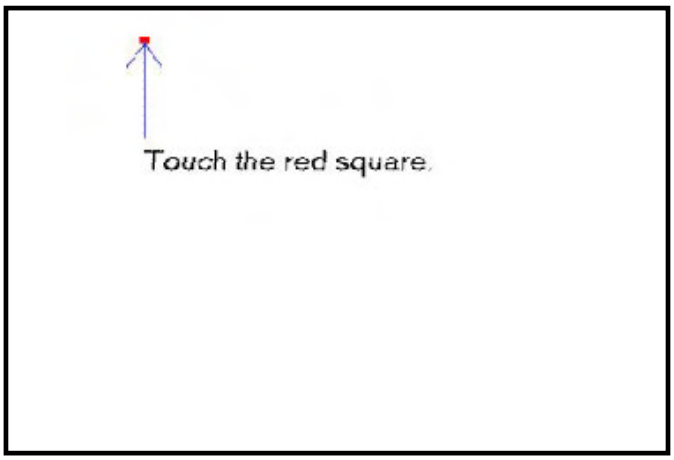
5. Calibration:
   To adjust the display with touch panel, click “Calibration” and follow the calibrate point to do calibration; there are five points on screen for calibration.



6. Press OK.

4.2.3 Driver Installation - DOS

- **Using “INSTALL.EXE” Utility to Install PenMount Software Driver**

1. Insert Driver CD and select
   “Senses 6100series\Senses6172\Driver\Step 5. Touch\Driver\DOS\Install.exe” or
   “Senses 6100series\Senses6152\Driver\Step 5. Touch\Driver\DOS\Install.exe” or
   “Senses6100series\Senses6170\Driver\Step 5. Touch\Driver\DOS\Setup.exe”
   “Senses6100series\Senses6150LP\Driver\Step 5. Touch\Driver\DOS\Setup.exe”

2. Press ENTER key to install the drivers to drive C or use keyboard to key-in the hard disc drive that you plan to install the driver.
3. The driver will ask “Do you want to modify your Autoexec.bat to initialize PenMount? (Y/N)” Suggest you choose “YES” for generating the initialization instructions in AUTOEXEC.BAT files. Then follow up the instructions to complete the installation.

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- **Identify the Communication Port and IRQ Number**

1. For the first time installation, or changing PenMount Touch Screen's COM port, use PMDETECT (e.g. C:\PENMOUNT\PMDETECT) to check the COM port and IRQ number. PMDETECT will save the correct data to PMOUSE.CFG file for further use.

2. The driver detects your communication COM port and IRQ number from COM1 IRQ4, COM2 IRQ3, COM3…. to COM4 IRQ15. PenMount driver can find the COM port and IRQ number automatically. The screen will then show:
   PenMount is initialized successfully!!!
   Create file "pmouse.cfg". Success.
   PenMount internal settings:
   Comm. Port: COM<n> IRQ<n>

1. PMDETECT program is able to skip the IRQ number detection if the Touchscreen Driver Installation **13** does not need to detect the specified IRQ number. For example, you do not need to detect IRQ5, and the command is:
   C:\PENMOUNT\PMDETECT -N5

2. If you do not need to detect IRQ5 and IRQ9, the command is:
   C:\PENMOUNT\PMDETECT -N5 -N9

- **Calibration**

1. To adjust the touch screen mapping properly to display screen, use PM.BAT (C:\PENMOUNT\PM) to do calibration. Choose "1" DO CALIBRATION (adjust screen mapping).

2. The message pops up to ask if you select the video mode number. Use keyboard to start the calibration, touch the upper-centre point, then right-centre point, bottom-centre point and left-centre point in sequence. After the calibration is done, the data will be shown on the screen, press any key to continue.

3. After the calibration, you are advised to test the touch screen and display mapped results by choosing "3" DRAWING TEST under PM.BAT

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- **Initializing the PenMount Driver**

  If you don't have the initialization commands in AUTOEXEC.BAT, initialize PenMount C:\PENMOUNT\PMINIT) controller before you use the PenMount Touch Screen. The display will show the initialization message:
  PenMount V7.06 Copyright(c) SALT International Corp.
  Test:COM<n> IRQ<n> (<n> is the number after PMDETECT done)
  PenMount communication settings: COM<N> IRQ<n> Baud Rate: <xxxx>

Demonstration

To demonstrate or test touch screen operation, please select "3" DRAWING TEST in PM.BAT file of the Utility Directory. Drawing will be shown on the screen. The demonstration program "ICECREAM.EXE" in the "PENMOUNT" directory can be used too.

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A p p e n d i x

Power Supply Specification

A. Power Supply for Senses 6172 / 6170 / 6152
(Power Supply FSP250-50GUB (250W, AC100~240V Input))

A.1 Electrical Requirements

- **OUTPUT ELECTRICAL REQUIREMENTS**

The power supply will meet all electrical specifications below, over the full operating temperature range and dynamic load regulation.

- **OUTPUT RATING**

Output	Nominal	Regulation	Ripple/ Noise	Min	Max
1	+3.3V	±5%	50mV	0.3A	16.8A
2	+5V	±5%	50mV	0.3A	12.0 A
3	+12V	±5%	120mV	1.5A	10.0 A
4	-12V	±10%	120mV	0.0 A	0.8A
5	+5VSB	±5%	50mV	0.0 A	2.0A

Note *–12V,+3.3V, +5V,+12V will have the regulation to ±10% when all load removed.*

The +3.3V and +5V total output should not exceed 105W. The +3.3.V, +5V, and +12V total output should not exceed 230W. The total output for this subject power supply is 250W.

- **LOAD CAPACITY SPECIFICATIONS**

The cross regulation defined as follows, the voltage regulation limits DC include DC Output ripple & noise.

LOAD	+3.3 V	+5V	+12V	-12V	+5VSB
Condition_1	X	X	X	X	2A
Condition_2	0.5A	0.3A	1A	0A	0.1A
Condition_3	0.5A	2A	2A	0.8A	0.1A
Condition_4	1A	2A	17A	0.1A	0.1A
Condition_5	1A	10A	4A	0.1A	0.1A
Condition_6	4.5A	18A	12A	0.1A	0.1A
Condition_7	12A	2A	2A	0A	0.1A
Condition_8	17A	9.7A	10.5A	0.8A	2A

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- **HOLD-UP TIME (@FULL LOAD)**

115V / 60Hz : 17ms. Minimum.
230V / 50Hz : 17ms. Minimum.

- **OUTPUT RISE TIME**

(10% TO 95% OF FINAL OUTPUT VALUE, @FULL LOAD)

115V-rms or 230V-rms	+3.3Vdc	20ms Maximum
	+ 5Vdc	20ms Maximum
	+ 12Vdc	20ms Maximum
	+ 5Vsb	20ms Maximum
	- 12Vdc	20ms Maximum

- **OVER VOLTAGE PROTECTION**

Voltage Source	Protection Point
+3.3V	3.76V – 4.8V
+5V	5.6V – 7.0V
+12V	13.0V – 16.5V

- **SHORT CIRCUIT PROTECTION**

Output short circuit is defined to be a short circuit load of less than 0.1Ohm. In the event of an output short circuit condition on +3.3V, +5V or +12V output, the power supply will shutdown and latch off. The power supply shall return to normal operation after the short circuit has been removed and the power switch has been turned off for no more than 2 seconds.

- **OVERLOAD PROTECTION**

Overload currents defined as a 10A/s fault current ramp starting from full load, applied to the +3.3V, +5V output, shall not cause that output to exceed 32A before the output voltage drops below 0.5V and is latched off. The +12V output shall not exceed 20A under the same ramp conditions starting at full load before it is latched off.

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- **POWER SIGNAL**

POWER GOOD @ 115/230V,FULL LOAD	100 –500ms
POWER FAIL @115/230V, FULL LOAD	1ms minimum

A.2 EFFICIENCY

Loading	Voltage	Full load	Typical load	Light load
Required Minimum Efficiency	115V	80%	81%	80%
Required Minimum Efficiency	230V	81%	82%	80%

A.3 ENVIRONMENTAL REQUIREMENTS

- Operating temperature range: 0°C to 50°C
- Storage temperature range: -20°C to +80°C
- Humidity, non-condensing: 5% ~ 95%RH, Non-Condensing
- Vibration: 0.25G, 10~250Hz
- Shock: -40G, 11ms for Storage,
  -10G, 11ms for operating

A.4 RELIABILITY

The power supply reliability, when calculated by MIL-HDBK;latest revision, are exceed 100,000 hours with all output at maximum load and an ambient temperature of 25℃.

A.5 SAFETY

NEMKO EN 60950
TUV EN60950 OR VDE EN60950
UL 60950
CSA 22.2 NO. 60950
IEC 60950
CE

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B Power Supply for Senses 6150LP (180W)

(Power Supply: FSP180-50PLA1 (180W, AC 110~230V Input))

B.1.1 ELECTRICAL REQUIREMENTS

- **OUTPUT ELECTRICAL REQUIREMENTS**

The power supply will meet all electrical specifications below, over the full operating temperature range and dynamic load regulation.

- **OUTPUT RATING**

Output	Nominal	Regulation	Ripple/ Noise	Min	Max
1	+3.3V	±5%	50mV	0.3A	16.8A
2	+5V	±5%	50mV	0.3A	12.0 A
3	+12V	±5%	120mV	1.5A	10.0 A
4	-12V	±10%	120mV	0.0 A	0.8A
5	+5VSB	±5%	50mV	0.0 A	2.0A

※ –12V,+3.3V, +5V,+12V will have the regulation to ±10% when all load is removed. The +3.3V and +5V total output should not exceed 61W. The +3.3.V, +5V, and +12V total output should not exceed 160W. The total output for the power supply is 180W.

- **LOAD CAPACITY SPECIFICATIONS**

The cross regulation defined as follows, the voltage regulation limits DC include DC Output ripple & noise.

LOAD	STM	+3.3V	+5V	+12V	-12V
ALL MAX	HHHH	4.5A	9.0A	9.0A	0.8A
+5V MAX other MIN	LHLL	0.3A	12.0 A	1.5A	0.0A
+3.3V MAX other MIN	HLLL	16.8 A	0.3 A	1.5A	0.0A

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+12V MAX other MIN	LLHL	0.3 A	0.3 A	10.0A	0.0A
ALL MIN	LLLL	0.3 A	0.3 A	1.5A	0.0A

- **HOLD-UP TIME (@FULL LOAD)**

115V / 60Hz : 17 mSec. Minimum.
230V / 50Hz : 17 mSec. Minimum.

- **OUTPUT RISE TIME**

(10% TO 90% OF FINAL OUTPUT VALUE, @FULL LOAD)
115V-rms or 230V-rms + 5Vdc : 20ms Maximum

- **OVER VOLTAGE PROTECTION**

+5V_{dc} output: +5.7V_{dc} minimum, + 6.5V_{dc} maximum
+12Vdc output: +13.3Vdc minimum, +15.6V_{dc} maximum
+ 3.3V_{dc} output: +3.7Vdc minimum, + 4.5V_{dc} maximum

- **SHORT CIRCUIT PROTECTION**

Output short circuit is defined to be a short circuit load of less than 0.1 ohm. In the event of an output short circuit condition on +3.3V, +5V or +12V output, the power supply will shutdown and latch off. The power supply shall return to normal operation after the short circuit has been removed and the power switch has been turned off for no more than 2 seconds.

In the event of an output short circuit condition –12V output, the power supply will not latch off. The power supply shall return to normal operation as soon as the short circuit has been removed and the power switch has been turned off for no more than 2 seconds.

- **OVERLOAD PROTECTION**

Overload currents defined as a 10A/s fault current ramp starting from full load, applied to the +3.3V, +5V output, shall not cause that output to exceed 32A before the output voltage drops below 0.5V and is latched off. The +12V

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output shall not exceed 20A under the same ramp conditions starting at full load before it is latched off.

- **POWER GOOD SIGNAL**

The power good signal is a TTL compatible signal for the purpose of initiating an orderly star-up procedure under normal input operating conditions. This signal is asserted (low) until +5Vdc has reached 4.75 volts during power up. Characteristics:

TTL signal asserted (low state) : less than 0.5V while sinking 10mA.
TTL signal asserted (high state): greater than 4.75V while sourcing 0.5mA.
High state output impedance: less or equal to 1Kohm from output to common.

POWER GOOD @ 115/230V,FULL LOAD	100 –500ms.
POWER FAIL @115/230V, FULL LOAD	1ms. minimum

B.2 EFFICIENCY

115 VAC @Full Load	68% minimum
230 VAC @Full Load	68% minimum

B.3 ENVIRONMENTAL REQUIREMENTS

- Operating temperature range: 0°C to 50°C
- Storage temperature range: -20°C to +80°C
- Humidity, non-condensing: 5% ~ 95%RH, Non-Condensing
- Vibration: 0.5G, 10~250Hz
- Shock: -40G, 11mSec for Storage, -10G, 11mSec for operating

B.4 MTBF

The power supply has a minimum predicted MTBF(MIL-HDBK-217) of 100,000 hours of continuous operation at 25℃, maximum output load, and nominal AC input voltage.

B.5 SAFETY

TUV
UL 60950
CSA 22.2 Level 3
CE

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